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Assessing Progress Toward Greater Equality of Income Distribution

Gary S. Fields
Cornell University, gsf2@cornell.edu

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Abstract

This paper examines the suitability of increases in income equality as a criterion for assessing "commitment" and "progress" of countries, and hence, for allocating development assistance in accordance with the 1975 amendments to the Foreign Assistance Act of 1961. The principal conclusions are:

1. Income distribution is a useful concept; the usual figures on income in the current month or year, although not ideal, provide a reasonable approximation to economic well-being.
2. Reliable and timely data for measuring changes in income distribution are regularly available in only a handful of A.I.D.-recipient countries.
3. Since the concern of the development community appears to be the alleviation of absolute economic misery, progress toward economic equality is best gauged by improvements in absolute economic position of those at the bottom of the economic hierarchy; this contrasts with the relative inequality measures used in most studies of poor countries up to now.
4. Dramatically different assessments of countries' progress toward improving income distribution and alleviating poverty may be reached depending on whether we use measures of absolute poverty or of relative inequality; the actual experiences of Brazil and India show how great a difference the choice of measure makes.
5. There is a very real danger in using any measurement of changing income distribution as an indicator of a country's commitment to alleviating poverty; no easily-calculable statistic can tell us what was possible, and therefore how well a country did relative to its potential, given its resource endowment and other factors conditioning its course of development.

Keywords

income distribution, income equality, Brazil, India, poverty, development

Comments

ASSESSING PROGRESS TOWARD GREATER EQUALITY OF INCOME DISTRIBUTION

Gary S. Fields

Yale University

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CONTENTS

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This paper examines the suitability of increases in income equality as a criterion for assessing "commitment" and "progress" of countries, and hence, for allocating development assistance in accordance with the 1975 amendments to the Foreign Assistance Act of 1961. The principal conclusions are:

(1) Income distribution is a useful concept; the usual figures on income in the current month or year, although not ideal, provide a reasonable approximation to economic well-being.

(2) Reliable and timely data for measuring changes in income distribution are regularly available in only a handful of A.I.D.-recipient countries.

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INTRODUCTION

U.S. law requires that foreign assistance be directed increasingly toward countries which are committed to and are making progress toward "greater equality of income distribution" so as to "help the poor toward a better life." The concern of this paper is how to gauge improvements in economic position of the poor.

In concentrating on income distribution, we should bear in mind that income distribution is but one indicator of economic well-being among many. Aid legislation directs our attention toward other indicators---gains in employment and reductions in unemployment, improvements in agricultural productivity, declines in infant mortality, and slower rates of population growth. Other authors are preparing background papers on each of these subjects.[1]

I would advance the view that change in income distribution, appropriately conceived and measured, is as good a criterion for assessing progress toward the alleviation of poverty as any. Income is more intimately bound up with a family's command over economic resources, and therefore its poverty position, than is any other single indicator. Put somewhat differently, while rising modern sector employment or reduced infant mortality might be <u>suggestive</u> of improvements in economic position of the poor, gains in real income among low income groups provide <u>direct</u> evidence that poverty is being alleviated. In this paper, I shall offer specific suggestions on how to implement the income distribution indicator.

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[1] These indicators are part of a broader group of factors comprising a set of social indicators. The United Nations Economic and Social Council (1976), for example, has recommended a series of social indicators including: statistics of size and structure of the population; education; employment and unemployment; distribution of income, consumption, and wealth; health and nutrition; housing and its environment; and other secondary fields.

This paper answers the following questions:

1. The indicator cited above, "greater equality of income distribution," presumes income is an adequate measure of the welfare of the poor. What are the strengths and limitations of alternative income concepts?

2. "Greater equality of income distribution" implies an increase in the relative incomes of the poor in developing countries (relative to the incomes of the non-poor). The use of relative inequality measures dominates the existing literature on income distribution and economic development. What are the main lessons from these studies?

3. Is it desirable to use relative income measures to indicate an increase in the welfare of the poor (or a reduction in their poverty) in developing countries, and in turn, to assess "commitment" and "progress" in meeting the stated objectives? Are other indicators based on absolute incomes and poverty possibly more appropriate?

4. Are reliable and accurate data available, on a regular basis, to measure the various indicators?

5. Taking into account cost and other considerations raised above, what recommendations can be made regarding A.I.D. reporting of the recommended indicator(s) on a regular basis?

The plan of this paper is as follows. Section I examines the usefulness of the income distribution notion itself and of the various income concepts which are available as measures of economic well-being. The main conclusion is that while current income is not an ideal measure of economic welfare, it represents the best possible compromise between conceptual suitability, on the one hand, and data availability on the other. Supplementary data on wealth, housing conditions, infant mortality and other economic indicators are useful adjuncts where available.

Section II then discusses alternative ways of studying the income dis-

tributional effects of economic development. Doubts will be raised about the suitability of the class of relative inequality measures as a whole as indicators of change in the welfare of the poor. We will explore two families of alternative indicators, based on absolute and relative poverty measures respectively. By means of a simple numerical example, we will investigate differences among the three approaches. With this as a guide, we will decide which of them appears most appropriate as a criterion for assessing low income countries' progress toward improving the economic position of their poor.

Section III reviews the literature on relative income inequality. We look at evidence on the cross-sectional relationships between income inequality and the level of development, the major findings of studies of the correlates of inequality, and evidence on changes in income inequality within a given country over time. The theme unifying these three sections is that all rely on the usual tools of the trade---Lorenz curves, Gini coefficients, income shares of the richest X% and poorest Y%, and so on---all of which measure <u>relative</u> income inequality.

Section IV takes a new tack based on direct examination of <u>absolute</u> incomes and poverty. We will make use of a family of alternative indicators measuring the number of persons whose incomes are less than an agreed-upon poverty line and the average incomes among this low income group. It will be shown that the use of these alternative indicators results in a markedly different assessment of the actual experiences of two countries---Brazil and India---which have so far been subjected to absolute poverty types of analysis.

Section V considers implementation of the absolute poverty approach

to income distribution, including both analytic and data requirements. That section also discusses the extent to which reliable and accurate data are available, on a regular basis, to measure the various indicators. Besides the general description in the text, there are two extensive appendices. The first describes the major compilations of data on income distribution in less developed countries. The second presents detailed information on a country-by-country basis for each of 14 A.I.D.-recipient nations.

The paper concludes with a summary of the main findings and some final remarks on the appropriateness of assessing countries' progress and commitmnet to development by measuring reductions in inequality and alleviation of poverty.

I. INCOME AS AN INDICATOR OF ECONOMIC WELL-BEING

This section considers the suitability of income as an indicator of economic well-being. I shall take the view that information on the distribution of annual or monthly income of the sort obtained in the usual household surveys and population censuses may serve as an appropriate guide to a country's progress in alleviating poverty.

A. Annual Income

The usefulness of income equality as a criterion for assessing progress and commitment toward economic development hinges on the assumption that income is a meaningful indicator of economic position. Two standards for gauging the usefulness of the income measure are conceptual suitability, on the one hand, and data availability on the other.

Let us first consider the notion of economic well-being. Without delving into the metaphysical realm, it is probably safe to assert that economic well-being is related to the goods and services one consumes. This consumption, in most cases, depends monotonically and very nearly dollar-for-dollar on income. Hence, the central role of income distribution as a measure of economic position.

It is easy to think of exceptions to these generalizations: the cripple who derives less satisfaction from goods and services than the fortunate among us who are well-endowed physically, the young couple receiving large and frequent gifts from their parents, the rich with large asset holdings who finance their consumption out of their wealth rather than from their earnings, and the peasant family which grows and consumes its own food and has little or no cash income deriving from the sale of a marketable surplus. In all these cases, cash income is an inaccurate measure of the individual's or family's command over economic resources. At issue is the severity of the inaccuracies, since some are undoubtedly more

The sort of income distribution statistics found in less developed countries take some of these considerations into account but not others. Health status and intra-family gifts are examples of a broad range of considerations which never enter into income distribution data. The judgment is made, quite properly I think, that the costs of worrying about these factors far outweigh the benefits. On the other hand, adjustments for home-produced consumption and income from wealth are often made, and with good reason, since these factors together affect the economic position of large numbers of income recipients.

Income distribution figures typically measure money income received during a month or year. For example, the U.S. Censuses ask for income received in the previous year, but these are conducted only at ten year intervals. In the interim, the Census Bureau regularly reports income data derived from the Current Population Survey (CPS) of some 47,000 households. Income is defined as follows:

> Data on income collected in the CPS are limited to money income received before payments for personal income taxes and deductions for Social Security, union dues, Medicare, etc. Money income is the sum of the amounts received from earnings; Social Security and public assistance payments; dividends; interest; and rent; unemployment and workmen's compensation; government and private employee pensions; and other periodic income. (Certain money receipts such as capital gains are not included.) Therefore, money income does not reflect the fact that many families receive part of their income in the form of non-money transfers such as food stamps, health benefits, and subsidized housing; that many farm families receive non-money income in the form of rent-free housing and goods produced and consumed on the farm; or that non-money incomes are also received by some nonfarm residents which often take the form of the use of business transportation and facilities, full or partial payments by business for retirement programs, medical and educational expenses, etc.[1]

Many economists have questioned the conceptual suitability of such figures. Taussig (1973), for instance, cites nine reasons why the standard annual money income statistics published in the United States fail to

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[1]Source: U.S. Bureau of the Census (1976).

provide an adequate measure of economic well-being and computes alternative measures based on these adjustments. The factors considered are:

1. The Census money income measure excludes non-monetary income receipts.

2. These figures are reported on a before-tax rather than an after-tax basis.

3. No account is taken of price differences in various cities or regions of the country.

4. Income is reported for family units defined by the Census, with generally no allowance made for variations in family size or composition.

5. The figures contain no information on the distribution of net worth.

6. Data are presented for a single year; a longer time horizon might distinguish permanent from transitory components.

7. No account is taken of differences in leisure.

8. These income figures exclude capital gains, benefits from government services, and other supplements to one's income or consumption.

9. The figures are reported for the Census-defined family unit rather than a "pooling consumer unit."

In studies of less developed countries, researchers have wrestled with these and other issues in seeking to arrive at a "correct" distribution of income for a less developed country. The most eminent researcher in this area is Simon Kuznets; see Kuznets (1963, 1976) and others of his articles cited therein. See also the work of Bronfenbrenner (1971, pp. 31-38) and Szal (1975).

From these and other writings, there appear to be three points of consensus. The first relates to the conceptual suitability of income as a measure of economic welfare. There is little disagreement with the view that when appropriately defined, measured, and adjusted, income is an analytically valuable guide to economic status.[1] The second point of

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[1]Of course, statistics on income (whether national, sectoral, or individual) are often seriously inaccurate. A particularly negative view is expressed by Averch et. al. (1970) with respect to income data in the Philippines. A less pessimistic assessment is presented by Altimir (1975) for Latin American income data, although he does point to tendencies for income reported in censuses and surveys to understate national income by 10-20% or more. These and other reviews of data reliability should serve as a warning to those who unquestioningly

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consensus is that the family is a more appropriate recipient unit than the individual. The third point is that a number of adjustments to annual (or monthly) cash income are in order. Let us now take up the latter two points in some detail.

B. Choice of Recipient Unit

Kuznets has long taken the position that the appropriate recipient unit is the family or household rather than the individual. There are several reasons for this view. The most important justification for looking at families rather than individuals is the fact of widespread income sharing within families. Economically active and dependent members are both included, and the family as a unit decides how to allocate the distribution of goods and services among themselves.[1] Another reason for choosing the family as a recipient unit is the difficulty in many situations of attributing incomes or earnings to a specific individual, as in family-run farms or businesses. Still another is that property is jointly-held. Hence the income from that property is jointly-received and not assignable to any one family member. Finally, a family member or members may engage in economic activity specifically to supplement another member's income or to replace the loss of that income, as studies of "additional worker effects" bear witness to.[2]

C. Adjustments to Annual Income

If we take income to be the annual or monthly inflow of resources

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accept the authority of respected scholars and aid organizations and who uncritically utilize data compilations and tabulations of the sort described in Section V and Appendix II.

[1] It has been argued, though, that families may systematically distribute their resources inequitably--in favor of the head of household and at the expense of other family members, especially very young children. On this, see McGreevey (1976).

[2] The "additional worker effect" refers to the entry into the labor force of an additional family member because of low income of the principal breadwinner. Standard labor economics textbooks in the United States (e.g., Reynolds (1974) or Fleisher (1970) present substantial evidence for the importance of these effects. Similar evidence is reported in studies of less developed countries (e.g., Urrutia (1968)).

(primarily cash) to a receiving unit (such as a family or individual), the literature suggests that a number of adjustments to gross cash income would improve the usefulness of the measure. These are of two types:

(i) Additions or Modifications of the Income Measure.

Cash income is thought to be too crude a measure. The suggested modifications include allowances for imputed incomes, price adjustments, wealth, and taxes, transfers, and social services. Each of these modifications would produce a closer correspondence between income and command over economic resources.

(ii) Classification of Recipient Units by Relevant Characteristics.

Whatever income, adjusted or unadjusted, is actually measured, it is thought desirable to classify recipient units by relevant characteristics and to standardize for any compositional changes which may take place. In this category are classifications by family size and stage in the life cycle.

Let us explore further these various considerations.

(1) Nominal vs. Real Income

If income is to serve as a measure of welfare, it must accurately reflect real purchasing power. Where prices differ, nominal income should be converted into real income using the cost of an appropriately selected consumption basket.

The necessity of price adjustments is obvious in measuring changes in welfare over time in a country which has been experiencing inflation. But in addition, there are other types of price adjustments. Consider comparisons of economic well-being across geographical regions or income groups. For these purposes, we would like to convert money income into a real income equivalent by deflating by different price indices if either consumption baskets or prices differ between regions or income classes.

The problem of regional price differentials has been extensively treated in the literature, and I will not delve further into it here.[1]

With regard to price differentials among income groups, an example is medical care. Medical care is often provided free to people below a certain income level, and physicians often charge high income patients more than low income patients for the same services. Ideally, we would want to allow for price differences of this sort.

(2) Taxes, Transfers, and Social Services

After-tax income is obviously a better measure of welfare than is pre-tax income since nobody can spend what is taxed away. If transfer payments (pensions, income maintenance benefits, etc.) are also of any substantial size, we should also make adjustments for them.

Even more important in the case of the poor in less developed countries may be the amount of social services that they may receive free or at subsidized rates. Health care, education, housing, and high-nutrition foods fall into this category.

The desirability of imputing values for transfers and social services is clear in principle, but it may be tricky in practice, since most imputation procedures assume that the household would have chosen the same level of these goods and services had their incomes been raised and they bought those goods in the market. The easiest imputation would be at the rate of market prices. However, it might be more appropriate to evaluate the goods and services in question at the marginal cost of providing them.

(3) Imputations for Income-in-Kind

The less developed countries are largely agrarian. Peasant farmers in

[1]The most careful study I have seen of regional price differentials is by McCabe (forthcoming). In addition, the analogous problem of adjusting inter-country income levels for cost-of-living differences has produced some interesting results. Usher (1968) found strikingly different welfare ratios between countries by performing different types of adjustments. The ratio of U.K. national income per head to Thai national income per head assumes the values 13 to 1, 6 1/2 to 1, and 2 1/2 to 1 depending on how the comparison is made--the first ratio reflecting a money income measure at international exchange rates, the second a real income measure at Thai prices, and the third a real income measure at U.K. prices. More recently, Kravis (1975) has constructed internationally-comparable estimates of national income.

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these countries consume some part of their produce and market the remainder, if they are fortunate enough to have a remainder. Under these circumstances, the cash income accruing from marketed produce will understate their consumption, and hence their economic welfare. To obtain a more accurate income figure, we need to add the income-equivalent of home-produced consumption to their income from marketed produce.

Another related imputation is adjustment of modern sector wage income for income-in-kind received as a fringe benefit on the job. In Kenya, for example, housing and the mid-day meal are often provided to workers free or at a nominal charge. Allowances for these benefits are included in the income distribution figures of some countries but not others.

A third important imputation is the inclusion of the value of owner-occupied housing. This adjustment is commonly made in preparing the national accounts of many countries. It is also often applied to income distribution data.

Beyond their general importance for obtaining an accurate picture of the distribution of economic welfare, these imputations are important for several specific purposes including rural-urban welfare comparisons, comparisons over rural groups with different propensities to consume home production, and evaluation of dynamic agricultural sectors where cash crops may be replacing subsistence crops over time.

(4) Distribution of Wealth

Some writers have suggested that concern with the distribution of income may be misdirected, since economic position may be determined a great deal more by the distribution of wealth.[1] It is apparent why. A person who owns five textile mills, for example, is in a far better position than a

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Once again, the type of adjustment performed is found to make a major difference. Using exchange rate conversions, India appears to have a considerably lower Gross Domestic Product (GDP) per capita than Kenya. On the basis of international prices, however, the ranking is actually reversed--India's GDP per capita appears substantially higher than Kenya's. This evidence from international comparisons may carry over to intra-country income comparisons, insofar as the latter may also be highly-sensitive to the particular adjustment adopted. Empirical studies of this question have not, to my knowledge, been undertaken.

[1] See Taylor (1973).

person who owns none but has the same income.

Wealth might be included in the income measure by computing the annuity value of assets over the family's expected lifetime.[1] Another way might be to examine the size of the estates left by those who die and apply "mortality multipliers" to blow up the data to reflect the composition of the population.[2] Yet another is simply to add the dividends and other income from wealth to the earnings of family members and other income sources to obtain overall family income; this is done in some LDC income estimates.

There is very little information on the distribution of wealth or of income from wealth in less developed countries. What data there are accord with casual empiricism in indicating that wealth is highly-concentrated in few hands. The bulk of the population has no wealth at all other than the land they may own or the house they live in.

To some observers, the high concentration of wealth suggests that the distribution of wealth is terribly important in understanding the distribution of economic well-being. I would draw rather the opposite conclusion: that because so many people seem to have so little wealth, if we are to understand the determinants of their economic position, we must look elsewhere. Therefore, I would maintain that the lack of data on wealth poses less of a problem than lack of data to perform some of the other adjustments cited above.

(5) Income and Family Size

The economic welfare of a household clearly depends on its size. For a given level of income, the more members there are in the family, the less

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[1] This is suggested by Taussig (1973).

[2] Atkinson (1971) adopted this procedure for Great Britain.

the consumption of each one. In this sense, a larger family may be considered worse off than a smaller family with the same income. Offsetting this is an empirical regularity observed in a large number of less developed countries: family incomes are higher in larger families. Failure to correct for differences in family size would create appearances of inequality when in fact the average person in a large family may live as well as the average person in a small family.

To allow for size differences among families, two alternative adjustments have been proposed. One is to classify income units by family size and to look at the distribution of income within a size category. The other suggested adjustment is to work with per capita incomes.

In making either of these adjustments, two caveats should be borne in mind:

(i) Family size is often a matter of conscious choice. Some parents may be perfectly happy gaining the psychic gratification of additional children while experiencing the material discomfort brought about by less consumption per head.

(ii) Family size may be an indicator of potential family income, particularly in old age. In this way, the stock of children might be thought of as wealth, in the sense of being assets which will yield future returns.

These two caveats apply to either type of family size adjustment. For the per capita income type of adjustment, there is a third caveat relating to economies of scale. The sharing of common living areas, costs of food preparation, family transportation, and similar expenditures make the marginal cost of an additional family member less than the average cost. Thus, computations of per capita incomes may <u>overcorrect</u> for differences in family size. This suggests that stratification of the population by family size may be the better adjustment procedure.

(6) Income and Life Cycle Considerations

Throughout the world, family incomes vary with the stage of the life cycle. Available evidence (see Kuznets (1976)) suggests that in the U.S. and Israel, income rises from a relatively low income level at the early ages, peaks at middle age, and then declines in the years preceeding retirement, at least in the cross section. In the Philippines and Taiwan, however, incomes rise monotonically with age.

The association between income and age suggests that differences in annual incomes in the current year among a cross-section of individuals may misrepresent the extent of lifetime inequality for two offsetting reasons. Consider three individuals: a 25 year old farm worker, a 25 year old business executive and a 45 year old business executive. The two 25 year olds probably differ more in lifetime incomes than their current incomes would suggest, since the businessman is more likely to be upwardly mobile than the farm worker. On the other hand, the difference in lifetime income between the 45 year old executive and the 25 year old executive is probably overstated by their current incomes, since the 25 year old might well be expected to follow a career path not very different from that of the older man who preceeded him.

This example indicates the importance of comparing incomes within an age cohort, particularly when the age composition of the population is changing, as it is in many countries. Let us look, for instance, at the effect of a large influx of young persons into the labor force, due to the delayed effects of a decline in infant mortality.

Because the young workers are at the low income stage of their life cycles, their entry into the labor force would swell the bottom end of the

income distribution, appearing in the statistics as greater overall inequality. Unless we classify the population by age and examine the distribution of income within a cohort, we would be unable to discern the relative importance of this age-composition effect as compared with other structural changes (such as shifting occupational wage structure).

D. Feasibility of Adjustments to Annual Income: An Illustration for the Case of Pakistan

To illustrate the possibilities of performing the income adjustments just suggested (or lack thereof), consider a less developed country with exceptionally fine data, Pakistan. This case is interesting for two reasons: a) Pakistan has one of the most severe poverty problems of any country in the world (cf. Tables 8 and 9) and b) Household income and expenditure surveys have been conducted regularly since 1966.

The basic source for income distribution information in Pakistan is the Household Income and Expenditure Survey (HIES) performed by the Statistical Division of the Ministry of Finance annually in both rural and urban areas. More than 7,000 households are sampled. Table 1 indicates the types of tabulations published. For further description of the available data on income distribution in Pakistan, see Appendix II.

The published data appear rich in detail, wide-ranging in coverage, and consistent over time. Nonetheless, as I show in this section, it is not now possible to perform any of the adjustments described in Section C to improve the income measure. Some of the adjustments called for cannot be made because the existing surveys do not provide measures of the relevant variables. For others, where measures of the

relevant variables are provided, they are not in appropriate form. In some situations, due to the form of the tabulation, use of the tabulated data would result in imprecise or even misleading adjustments. In such instances, the correct adjustments could in principle be made from the underlying primary information, provided such information has not already been destroyed. Unfortunately, in Pakistan, some of the requisite micro data sets have been irretrievably lost.

Let us begin by examining the concept of income.. Two income concepts are used in HIES: (a) "Household income," and (b) "Household total receipts." "Household income" includes wages and salaries, earnings from self-employment, income from property including owner-occupied housing, gifts, and social insurance benefits. "Household total receipts" includes household income plus the accrual from sale of property and other assets, withdrawal from working capital, and savings, borrowings, and other such receipts. The documentation for HIES[1] makes it appear that "household total receipts" also include income in kind, i.e., income imputed to non-marketed goods and services, but it does not report the percentage of imputed income in total income.

Given this definition of household total receipts, we might consider making the following adjustments:

1. Adjustments for wealth.

2. Adjustments for age.

3. Adjustments for taxes, transfers, and government services.

4. Adjustments for family size.

5. Adjustments for differences in costs-of-living across regions and/or income group.

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[1] See, for example, Government of Pakistan (1973).

TABLE 1

TABLES CONTAINED IN HOUSEHOLD INCOME AND EXPENDITURE SURVEYS IN PAKISTAN

1. Size of an average household by monthly income groups
2. Average number of earners per household by monthly income groups
3. Distribution of earners by type, employment status and monthly income groups
4. Distribution of earners by monthly income and major occupational groups
5. Source of monthly household income by income groups
6. Source of monthly household receipts other than income by income groups
7. Distribution of monthly income by type of earners and income groups
8. Distribution of monthly income among households & population by income groups
9. Distribution of monthly expenditure per household on major food items by income groups
10. Distribution of monthly expenditure per household by income groups
11. Distribution of monthly consumption expenditure per household by income groups
12. Distribution of monthly expenditure per household on apparel, textile & footwear by income groups
13. Distribution of monthly expenditure per household on fuel & lighting by income groups
14. Distribution of monthly expenditure per household on house rent & housing by income groups
15. Distribution of monthly expenditure per household on furniture & fixtures by income groups
16. Distribution of expenditure per household on miscellaneous items by income groups
17. Distribution of total monthly receipts utilised by households for expenditure and saving by income groups
18. Monthly per capita consumption of major food items by income groups
19. Budgetary position of households by income groups

Source: Government of Pakistan (1973)

The possibilities of performing these adjustments are discussed below. The findings are discouraging.

The first three adjustments cannot be made from the HIES data since the relevant questions do not seem to have been asked. A few specific comments are in order:

(1) It seems that some form of information on assets was collected in HIES since income from the sale of assets is a part of the definition of household receipts. But it is not clear whether an estimate of net worth can be derived on the basis of whatever information was collected. Recent studies of income distribution in Pakistan suggest that such an estimate cannot in fact be made.[1]

(2) As far as age data are concerned, the HIES tabulations indicated in Table 1 provide no information. However, Rajaraman (1975, p. 27) mentions that age data are regularly collected, and so too are data on education levels. It is possible, then, that the primary data may contain this information even though the tabulated figures do not, but I could not verify this.

(3) As far as the adjustments for taxes and transfers are concerned, they are by all accounts of little quantitative importance. Only a small fraction of the population earns enough income to pay taxes. Transfer programs are small in Pakistan. However, government subsidies of one sort or another might be relatively important as a percentage of income of the poor. Unfortunately, we have no way of knowing from the HIES data if the poor are the recipients, and if so, how much they receive.

In the case of adjustment of income to a per capita basis,

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[1] The most recent study with which I am familiar is by Ayub (1976). See also the references cited therein.

the HIES data do not permit the appropriate calculation.

The information from HIES on average household size by income group is reproduced in Table 2. We see a clear positive relationship between income and household size. It would seem, therefore, to be a straightforward matter to use the HIES tabulations to adjust household income to a per capita basis. One possible adjustment procedure would be to divide each of the income figures in column 1 by the average family size figures in column 2. This procedure, if followed, would take into account only inter-group variations in average family size, ignoring intra-group variations. Yet, the intra-group variations are presumably much more important.[1] Neglect of intra-group differences therefore results in substantial understatement of the true number of families with low per capita income (namely, the larger-than average families within each income group) and also in a similar understatement of the number with high per capita income (namely, the small families in the high income brackets). Nonetheless, this type of family size adjustment has been made in at least one study, by Khandker (1973). I would regard the resultant figures as grossly distortive of the true distribution of per capita income in Pakistan.[2]

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[1] For example, the difference in average family size between the lowest income group and the next lowest group is 0.2 persons. In contrast, monthly per capita income ranges between Rs. 25 and Rs. 2.5 respectively for one-person and ten-person families at the midpoint of the lowest group.

[2] In justifying his procedure, Khandker argues that total household income is a better indicator of a family's living standards than per capita income in societies where a large part of income is spent on overhead common to all family members. In making this argument, he is calling into question the appropriateness of any family size adjustment. It is not clear, therefore, why he attempts to perform one.

TABLE 2

AVERAGE HOUSEHOLD SIZE BY INCOME GROUP, PAKISTAN, 1971/72

Monthly Income Groups (Rupees)	Average No. of Family Members Per Household
Less than 50	2.9
50-99	3.1
100-149	4.2
150-199	5.1
200-249	5.8
250-299	6.6
300-399	7.3
400-499	8.1
500-749	8.6
750-999	9.9
1000-1499	9.0
1500-1999	7.6
2000 and above	8.8

Source: Government of Pakistan (1973, Table 1).

The problem with Khandker's type of family size adjustment could easily be overcome by recourse to alternative tabulations which might be readily produced if the primary data were available. What is needed in place of the data in Table 2 is the following cross-tabulation:

Income Class	Family Size 1 2 3 ... 10 or more
Less than 50	Numbers of families in the body of the table
50-99	
.	
.	
.	
2000 and above	

The reason no such tabulation is available is probably that no one has thought to ask for it.[1] This is an instance of a more general problem with income distribution data in less developed countries: the proper tabulations often do not exist, because planners and development researchers have not yet thought sufficiently about what they really need or, if they have thought sufficiently, the appropriate authorities have not yet acted upon their requests.

Consider finally the possiblity of adjusting for cost-of-living differences. The principal price differences in Pakistan are between urban and rural areas. Here, of course, we must appeal to data sources other than the Household Income and Expenditure Surveys. Once again, the data are seriously deficient.

Cost-of-living series are available within both the urban and rural areas. For urban groups in Pakistan, commodity price indices are regularly published in the Pakistan Economic Survey. The data appear reasonably reliable

[1] If, in the future, one wanted to construct this kind of table for Pakistan, problems might arise, since the primary data may no longer exist; see Rajaraman (1975, p. 28).

and well-suited to the goods and services purchased by urban industrial and clerical workers. There are no cost-of-living indices for middle and high income groups at present, but this information could be constructed quite easily by linking commodity price data with the expenditure information from HIES.

For the rural areas, no direct information is available on agricultural commodity prices. Notwithstanding, Chaudhry and Chaudhry (1974) have attempted to construct a cost-of-living index for rural laborers in Pakistan for the period 1966-1973. Their study is limited in usefulness because (1) it uses urban commodity prices, (2) it does not disaggregate for regional differences in prices or expenditure patterns, and (3) it covers only rural laborers with low incomes and does not cover the other rural classes. Clearly, their index does not serve to answer the basic question addressed in rural-urban cost-of-living comparisons: by what factor should a given rural income be inflated or deflated so as to represent an equivalent basket of goods and services (equivalent to what that same rural household would receive if located in an urban area).

In summary, of the many adjustments to income I have suggested, none of them can be done in Pakistan, a country with exceptionally good data. Just how serious is the problem? I take this question up next.

E. In Lieu of a Conclusion

This section has examined the usefulness of income as a measure of economic well-being and has described a number of income adjustments that would be desirable in principle. In practice, though, it is impossible to perform these adjustments in Pakistan, a country with a seemingly extensive data base. For some of the factors involved, the inability to carry out the

desired adjustments stems from the absence of underlying data, while for others, the problem is lack of suitable cross-tabulations.

All the income adjustments, classifications, and other fine points mentioned above are useful and indeed indispensable in measuring "true" income distribution. This holds whether we are interested in the distribution of income within a given country at a point in time, or in a time series analysis of that country's development path, or in a cross section of many countries at different stages of development. These adjustments define an ideal: what information we would like to have and what we ought to do with it.

In reviewing the list of modifications, in light of the availability of data in a country with "good" information, I fear that all the attention paid to theoretical complexities and definitional problems may be taking us quite far afield from where we want to be. Our goal is to assess progress towards the alleviation of poverty and, more generally, to learn how the benefits of economic development are distributed. In other words, we want to assess changes in income distribution within a country over time. In time series comparisons, whatever biases and limitations there are in our data at one time may reappear the next time. If so, the indicated changes in the unadjusted data, for all their imperfections, are likely to parallel the changes in the "ideal" distribution of income.[1]

Take the following example. In Brazil, adjusted family income figures are not available; we have information only on distribution of cash incomes among persons in the economically active population. A reasonable presumption is that whatever changes we observe in the distribution of income among persons

[1] Note that this argument is made for the specific purpose of intra-country time series comparisons. For other purposes, such as international cross-section comparisons, the biases and limitations are more serious in some places than in others, rendering international comparisons tenuous.

in the economically active population will probably be found in the distribution of income among families, which we are unable to observe. Thus, if the current annual income data are themselves of sufficient reliability, and if the coverages of the two censuses are comparable, as would appear, it should be safe as a first approximation to use data on changes in incomes among the economically active population, unadjusted for anything.

This is not to say that more refined and better data are not of great importance, for indeed they are. What I mean to be arguing is that in the interim, until better data become available, in countries like Pakistan or Brazil with comparable and reliable censuses or surveys, I think we would do better to look at the income distribution data we have in order to measure the progress of individual countries toward alleviating poverty rather than to look at nothing at all. Thus, I would conclude that the usual types of figures on incomes, although not ideal in many respects, may serve as a useful guide to changes in the economic position of the poor. In the remainder of this paper, I suggest ways of taking income distribution considerations into account.

II. ALTERNATIVE APPROACHES TO THE STUDY OF THE SIZE DISTRIBUTION OF INCOME

The previous section concluded that the usual kinds of figures on incomes, although not ideal in every respect, may be used as meaningful indicators of change in economic well-being. We now explore the principal approaches to the study of income distribution. The two major ones are the relative inequality and absolute poverty criteria. In addition, mention is also made of a measure in more limited usage: the relative poverty criterion.

Despite popular parlance and practice, "income distribution" is not the same thing as "income equality (or inequality)." In a well-known book on the subject, Bronfenbrenner (1971, p. 27) writes: "By personal distribution we mean division of income (or wealth) by size, or more precisely, by size brackets of the income or wealth of economic units." [Emphasis in the original.] Later on (p. 43), he carefully distinguishes between the personal distribution of income and statistics such as the coefficient of variation which "measure the degree of inequality of a personal income distribution." [Emphasis added][1]

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[1]The distinction here is just like the difference in elementary economics between the definition of a multiplier (namely, the change in national income which results from a given exogenous change in a particular economic variable) and one measure of the multiplier (the reciprocal of the marginal propensity to save).

The distinction between income distribution and income equality (or inequality) is an important one. Contrast the way we usually think about income distribution from the way we are accustomed to think about the distribution of other economic or social magnitudes, for example, the distribution of education.

For education, our concern is how many people have attained what level. If a larger fraction of the population achieves literacy, let us say, we are inclined to regard that country's education system as having done "better." In making such a judgment, we usually do not think to ask whether more people had also completed university; nor do we compute a statistical measure of inequality of educational attainments, such as the variance or a Gini coefficient. Rather, our strategy is to pinpoint a target group whose upgrading we care most about and then to measure the rate of <u>absolute improvement</u> among that target group.

In studies of income distribution, the approach is ordinarily quite different. Most studies ask: "Did income distribution worsen?" Typically, that question is answered by examining either (i) how the income shares of particular deciles(or other groupings) changed, (ii) how the Lorenz curve shifted, or (iii) whether measures such as Gini coefficients, variance of incomes or their logarithms, etc. exhibit greater or lesser inequality.[1] All these are <u>relative inequality</u> measures. In effect, then, by beginning with relative inequality measures rather than with absolute levels, the approach to studies of the distribution of income reverses the approach to studies of the distribution of other economic and social goods.

Let us now examine their various approaches to the study of income distribution in some detail.

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[1] These terms are explained later in this section.

A. Relative Inequality Approach

In most studies of income distribution in less developed countries, the income distribution measure under consideration is relative income inequality. Relative inequality is conveniently illustrated by a Lorenz curve as shown in Figure 1. The Lorenz curve depicts the income share of any cumulative percentage of the population, ordered from lowest income to highest. All relative inequality measures in current use are based on the Lorenz curve. The Gini coefficient, being most directly related, is the ratio of the area between the Lorenz curve and the 45° line (area A in Figure 1) to the total area (A+B). The Gini coefficient thus varies between zero and one, and the higher the coefficient, the greater the degree of relative inequality. The fractile measures in common use, such as the income share of the poorest 40% or richest 10%, can also be read directly from the Lorenz curve. Finally, there is a class of relative inequality measures which may be calculated from the data contained in Lorenz curves. These include many familiar indices such as the variance (or standard deviation) of income or its logarithm, the coefficient of variation, Kuznets ratio, Atkinson index, Theil index, and many others.[1]

In using one or more of these inequality measures, the judgment is typically made that social welfare (W) depends positively on the level of national income (Y) and negatively on the inequality in the distribution of that income (I). For example, taking the share of income of the poorest 40% of the population (S) as an index of equality and the Gini coefficient (G) as an index of inequality, these studies would hold that

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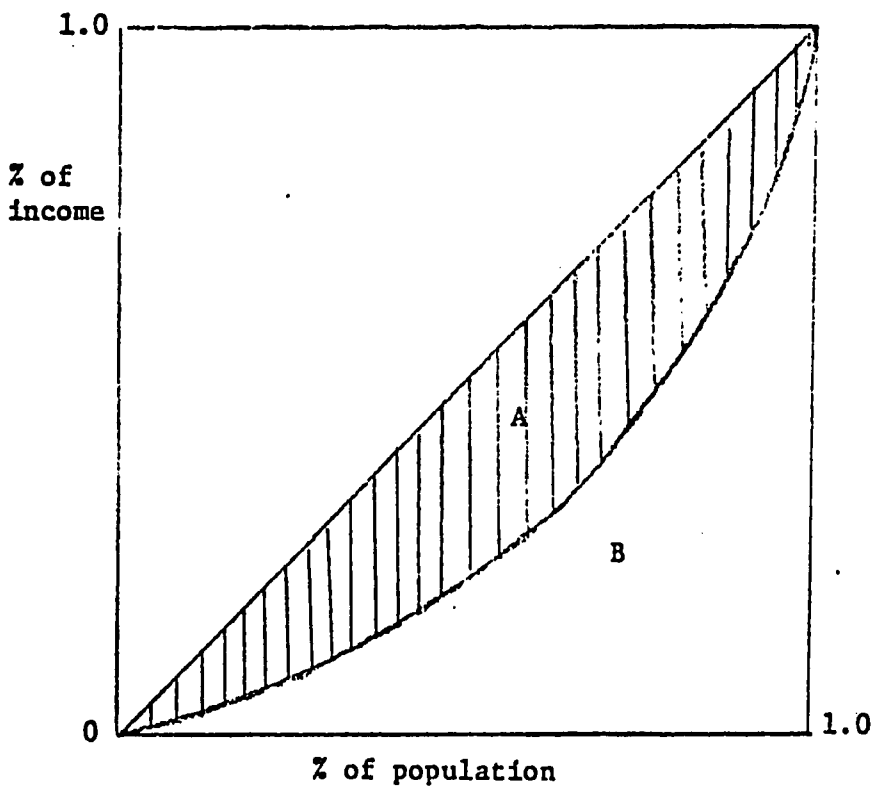
[1] Many references are available which give definitions and descriptions of these measures. See, for instance, Sen (1973).

FIGURE 1

LORENZ DIAGRAM



W is positively related to Y and S and negatively related to G.[1]

The terminology of these studies is indicative---falling S or rising G are given the non-neutral term "worsening of the income distribution," and it is generally thought to be a bad thing when rising measured inequality is encountered.

Let us consider a simple hypothetical numerical example showing how these judgments are brought to bear in practice:

Example One.

Country	Rate of Growth	Share of Lowest 40%: Level	Share of Lowest 40%: % Change	Gini Coefficient: Level	Gini Coefficient: % Change
Both countries initially		.363		.082	
Country A later	11%	.333	-.8%	.133	+62%
Country B later	22%	.307	-15%	.162	+97%

Country B grew twice as fast as country A. However, its income distribution, as measured by the Gini coefficient and income share of the lowest 40%, seems to be "worse" than in country A; that is, it would appear that the rich benefited at the expense of the poor, whose relative income share deteriorated. A development economist might question whether the higher rate of growth in country B was "worth it" in terms of income distribution, and a well-meaning development planner seeking to give very high weight to alleviation of inequality might go so far as to choose country A's policies over country B's.

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[1] In mathematical notation:

$$W = f(Y,S), \quad f_1 > 0, \; f_2 > 0$$

or

$$W = g(Y,G), \quad g_1 > 0 \quad g_2 < 0,$$

B. Absolute Poverty Approach

Now, let us consider another approach which looks directly at a country's progress in alleviating poverty among the very poorest.[1] We must first define what we mean by "poverty." Suppose we can agree that an individual is poor if his or her income falls below a specified dollar amount, with analogous figures for families of different sizes. A.I.D., for example, makes use of the figure of U.S.$150 per capita in less developed countries;[2] in the United States, the official poverty line is $5,500 for a non-farm family of four.[3] The poverty lines used in different countries and the ways they are arrived at are discussed further in Sections IV.B and V.A. Let us denote this poverty line, which we shall hold constant in real terms, by P*. "The poor" are those whose incomes are less than P*.

Most observers would share the following judgments about the extent of poverty (P):

(i) P is negatively related to the number of income recipients with incomes below the poverty line P*.

(ii) The larger is the average income of those below the poverty line, the lower is P.

(iii) Other things unchanged, the more unequal the distribution of income among the poor, the more severe is P.

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[1]Absolute income studies of less developed countries are the exception rather than the rule. Economists at the Institute of Development Studies, University of Sussex, have been taking an absolute income approach for some time; see International Labour Office (1970). More recently, the World Bank has begun to shift its focus as well; see Ahluwalia (1974). These studies are noteworthy precisely because they do differ from the usual approach.

[2]See A.I.D. (1975).

[3]See U.S. Bureau of the Census (1976).

In most studies, measures entering into these three judgments are computed separately. However, in a paper just published, Sen (1976) combines these measures and argues elegantly for the use of a composite index.[1]

Absolute poverty measures like those just presented have been used in research in the United States for many years; see, for example, Bowman (1973) or Perlman (1976). The main advantage of absolute poverty indices is that they provide direct measures of changes in the number of poor and the extent of poverty among them. Note, in contrast, that although poverty indicators can be computed from Lorenz curves or Lorenz curve-based inequality measures, this information is obtained only indirectly and often with considerable computational difficulty.

To see how the absolute poverty approach is applied, consider now another numerical example for a given country in an early and a later stage of its economic development. Assume the following hypothetical figures, where the poverty line is somewhere between $1 and $2:

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[1] The index recommended by Sen is

$$\pi = H[\bar{I} + (1-\bar{I})G_p],$$

where H = head count of the poor (i.e., how many there are),
I = average income shortfall of the poor (i.e., the gap between P* and the average income of those below P*), and
G_p = Gini coefficient of income inequality among the poor.
Thus, alternative specifications of the absolute poverty approach are:

(a) $W = f(H)$, $f' < 0$,

(b) $W = g(\bar{I})$ $g' < 0$,

(c) $W = h(\pi)$, where $\pi = H[\bar{I} + (1-\bar{I})G_p]$, $h' < 0$.

Example Two.

Country	Percentage of Labor Force in: High Wage Jobs (Real Wage = 2)	Low Wage Jobs (Real Wage = 1)	Rate of Growth of Modern Sector ("Modern Sector Labor Absorption Rate")
Both countries initially	10%	90%	
Country C later	20%	80%	100%
Country D later	30%	70%	200%

In both countries, the poor received the benefits of growth; but in country D, twice as many poor benefited. Other things equal, development economists would almost certainly rate country D as superior, and development planners would seek to find out what had brought about that country's favorable experience and adopt those policies in their own countries. In this second example, the preference is clear-cut, while in the previous example, the issue was open to doubt.

C. Relative Poverty Approach

The relative inequality and absolute poverty approaches are the two main ways in which distributional aspects of economic development have been considered. In addition, there is now a newer approach being promulgated by researchers at the World Bank and elsewhere known as the relative poverty measure.[1] This figure is the absolute income (in constant dollars) received by the poorest 40% of the population.[2]

Consider now a third example:

Example Three.

Country	Absolute Income of Poorest 40% of Population
Both countries initially	$40
Country E later	$40
Country F later	$40

[1] See, for example, Chiswick (1976).

[2] The choice of poorest 40% is purely arbitrary. What matters in this approach is the constancy of population share along with income variability among them.

Using the relative poverty measure, it appears that there was no improvement in absolute income of the poorest 40% in either case. One might ask: why grow if the poor do not share in the benefits of growth? In this third example, E and F both seem to have failed to alleviate poverty.

D. Comparison of the Three Approaches

In point of fact, countries A, C, and E are the same country, and countries B, D, and F the same country! Real-world economic development histories and policy projections are often presented in these different ways. Yet, as these examples make clear, how income distribution is studied---whether in terms of relative income inequality (as in example one), absolute incomes and poverty (example two), or relative poverty (example three)---may dramatically influence our perceptions of the outcome.

Specifically, in our examples, we have encountered the following differences. According to the absolute poverty criterion, B-D-F clearly dominates A-C-E on both growth and distribution grounds. Using the relative inequality criterion, it is difficult to judge; although B-D-F grew faster than A-C-E, its income distribution seems to have worsened.[1] Finally by the relative poverty criterion, both appear equally unsatisfactory, since neither country seems to have made progress in alleviating poverty; in fact, poverty was being alleviated in both, and at different rates.

To my mind, the failure of the relative poverty measure to record an income distribution change is worse than troublesome. These countries were alleviating poverty, yet the relative poverty measure is totally insensitive

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[1] Whether income distribution really worsened, even in relative terms, is not entirely obvious, when one looks at the absolute figures presented in Example Two. The possibility that the usual relative inequality measures may not be satisfactory even for making relative inequality judgments in this type of growth is dealt with further in Fields (1976b).

to this. On this basis, I would conclude that relative poverty measures are unsuited for gauging the distributional consequences of this type of growth. Hence, I will ignore the relative poverty measure subsequently.

Note that the difficulties with the relative poverty measure arise in cross sectional data, where we look at those who are the poorest 40% ex post at different times (i.e., disregarding the movement of specific individuals inco and out of the poorest 40%). If we had longitudinal data, and were able to trace the progress of those individuals who were the poorest 40% ex ante, the problem would not arise. This is because their average income would be higher the faster the rate of modern sector enlargement growth. Unfortunately in the real world, we do not have longitudinal data, so the relative poverty approach has serious problems.

E. Exploring the Choice Between the Relative Inequality and Absolute Poverty Approaches

Concerning the relative inequality and absolute poverty approaches, the discrepancy between the two is based in part on a legitimate difference in value judgments, in part on a statistical pattern which in some respects is artifactual. Let us explore these discrepancies further and ask:

(1) What is it about the process of economic development that produces a discrepancy between the different approaches?

(2) In assessing the distributional consequences of growth, do we wish to give greater weight in our judgments to the allevation of absolute poverty or to the narrowing of relative income inequality?

The answer to the first question is that the discrepancy is produced by the unevenness of economic development itself. The pattern depicted exemplifies what I call "modern sector enlargement growth," which takes place when an economy grows by enlarging the size of its modern sector, the incomes (or

wages) within the modern and traditional sectors remaining the same. The discrepancy arises because this type of growth affects only some of the poor, not all. Consequently, those whose situations are not improved by this type of growth, and who therefore remain as poor as before, receive the same dollar amount, but it is a smaller part of a larger whole. From this, it follows that: (1) the absolute incomes of the poorest 40% are unchanged,[1] and (2) the Lorenz curve shifts downward at its lower end, and consequently those Lorenz-curve based measures of relative income inequality which are sensitive to the lower end of the income distribution register a "worsening" of the income distribution.

We should note that "modern sector enlargement growth" is not just the figment of some ivory tower academician's imagination. This pattern is widely-regarded as an essential ingredient of development. In their famous book, Fei and Ranis (1964) wrote: "...the heart of the development problem may be said to lie in the gradual shifting of the center of gravity of the economy from the agricultural to the industrial sector...gauged in terms of the reallocation of the population between the two sectors in order to promote a gradual expansion of industrial employment and output." This characterization is echoed by Kuznets (1966). Empirical studies, such as that of Turnham (1971), have documented the absorption of an increasing share of the population into the modern sector as growth takes place. In a case study of Indian economic development in the 1950's, Swamy (1967) found that 85% of the change in the size distribution of income was due to inter-sectoral factors (namely, growth in importance of the urban sector and growing per capita income differential between the urban and rural sectors) and only 15% to changing inequality within the two sectors. Thus,

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[1] Observe that some persons who were originally in the poorest 40% are now in the high income sector and different individuals now comprise the poorest 40%, but we cannot detect that movement in cross-sectional data (in which the sampling procedures are the same but different individuals are sampled). Longitudinal studies tracing the same individuals over time are needed, but this kind of data simply does not exist for a representative sample of the population in <u>any</u> less developed country.

modern sector enlargement comprises a large and perhaps even predominant component of the growth of currently-developing countries.

The other question posed above regards the choice between absolute and relative income measures in determining who does and does not receive the benefits of growth. The choice depends on basic ethical considerations, so let me be forthright about my own value judgments. For me, the plight of the poor in less developed countries is objective, to the extent that they do not have command over sufficient resources to feed and clothe themselves and avoid disease. Thus, to my mind, poverty is an absolute condition, requiring analysis in absolute terms. I would therefore give predominant emphasis to data on changes in the number poor, the average extent of their poverty, and the degree of inequality among them.

Others have different concerns and make different judgments than I. They would give great weight to the subjective feelings of the poor who may feel relatively worse off if others' economic positions are improving and theirs are not. Observers who feel strongly about such relative income considerations are justified in using relative inequality measures.

What may not be justified, and there are many examples of this in the development literature, is the coupling of a concern over the absolute economic misery of the poor with reliance on calculations of changes in relative inequality over time. I fear this approach may be mistaken and misleading, quite apart from its logical inconsistency. For just as in the numerical example above, by assigning heavy weight to changes in the usual indices of relative income inequality and interpreting these increases as offsets to the economic well-being brought about by growth, important tendencies toward the alleviation of absolute poverty may be overlooked.

F. Conclusion

This section has pointed out the types of issues involved in establishing an income distribution criterion for assessing the progress of less developed countries toward reducing poverty. The conclusion is that income distribution is by no means the same thing as relative income inequality. As I understand the intent of the Congress and the mandate of A.I.D., the goal of economic development, and of aid to that development, is to alleviate absolute poverty. If that is the goal, and I agree that it should be, it seems logical to measure progress toward that goal directly using absolute poverty criteria, rather than indirectly by relative inequality or relative poverty indices. The numerical example of this section has shown how differences among the various approaches may arise. If students of economic development or policy-makers use relative inequality measures when they really care about absolute poverty, they may be misled.

Unfortunately, this is not just idle speculation. Major differences arise between the different approaches in actual practice. Two case studies are presented in Section IV. But before we turn to them, let us review the literature on relative income inequality.

III. RELATIVE INCOME INEQUALITY AT DIFFERENT STAGES OF DEVELOPMENT

Most studies of income distribution and economic development have been carried out in terms of relative income inequality. The maintained assumption of these studies is that relative income inequality is undesirable and that increases in inequality over time are to be thought of in negative terms. Typically, an increase in inequality is termed a "worsening" of the income distribution. This same judgment is made in the 1975 amendments to the Foreign Assistance Act in directing the President to assess poor countries' efforts to "promote greater equality of income distribution." This section offers a critical review of the available evidence from studies of relative income inequality and summarizes their main lessons.

A. Cross-Sectional Evidence on Income Inequality and Level of Development

A number of studies have been conducted looking at size distribution of income across countries at more or less the same point in time. The initial work in this area is that of Kuznets (1955). Kuznets compared India, Ceylon, Puerto Rico, the United Kingdom, and the United States and observed greater inequality in the developing countries. The pattern of greater relative income inequality in the less developed countries than in the developed countries was confirmed in a subsequent paper by Kuznets (1963) for 18 countries.

Based on that evidence, Kuznets was led to the famous "inverted-U hypothesis," which states that relative income inequality rises during the early stages of development, reaches a peak, and then declines in the later stages. It is interesting to note that Kuznets assumed LDCs had greater inequality in their earliest stages of development, because everyone was relatively the same, i.e., equally poor. No data were available to test this speculation. Even today, suitable data do not exist; see Kravis (1973, p. 71).

In the late 1960's and early 1970's, Adelman and Morris gathered new data for 43 developing countries. In their 1973 book, they presented considerable evidence on the correlates of relative income inequality. By means of analysis of variance, they found six factors to be important in explaining variations in relative income inequality. Included among them was the level of economic development. We will return to the correlates of inequality later in this report.

A short while later, Paukert (1973) came along to try to refine Adelman and Morris' estimates. He discarded information which he thought to be particularly unreliable, added some new countries where good data had recently become available, and presented summary information on the size distribution of income in 56 countries. For each of several alternative relative inequality measures, Paukert found that inequality begins at a comparably low level, reaches a peak in the $301-500 per capita income countries, and then diminishes at higher incomes. Thus, the inverted-U pattern is reconfirmed.

Most recently, new inter-country evidence has been analyzed by Ahluwalia (1976). Using updated data compiled by Jain (1975) for 62 countries, Ahluwalia also finds the inverted U pattern in the cross sectional data.

From this evidence, many development economists were led to the view that "income distribution must get worse before it gets better." There was considerable pessimism over the supposed tradeoff between growth and income equality.

There are two immediate problems with this inference. One is that the conclusion is based on cross section data rather than on analysis of historical trends over time. Because of this, Adelman and Morris, in the introduction

to their book, have used words like "preliminary," "exploratory," and "tentative" to describe their efforts. The direct evidence on income distribution change over time in a given country's economic development is limited to relatively few countries. We shall review some of the major direct studies in Section D.

A second problem with the inverted-U is that we are dealing with averages among groups of countries and not, for the most part, with the information on individual countries themselves. Table 3 and Figure 2 present Paukert's data. In Figure 2 , the individual data are indicated by asterisks, and averages for each income class by heavy circles. Casual inspection suggests that there is much more variation in relative inequality within countries grouped by gross domestic product per capita than between them. Before regarding the inverted-U pattern as inevitable, therefore, even in the cross section, we need to know how well the inverted-U fits the data.

To explore this question, let us work directly with the individual country data rather than the grouped data. By means of multiple regression analysis, we may determine (i) whether an inverted-U is the appropriate characterization of the inequality-income relationship, and (ii) whether any particular pattern of inequality change over time is inevitable. On both accounts, the evidence suggests that income distribution need not get worse before it gets better.[1]

These findings are consistent with the writings of many leading development economists (e.g., Fei and Ranis (1964) and Adelman and Morris (1973)) who have been saying that the income distribution is determined as much or more by the type of economic development and the policies followed in a given country as by the level of development. One can hope, therefore, that appropriate public policy can be designed so as to avoid a deterioration in the relative distribution of income and to effect an improvement in the economic status of the poor.

B. Causes of Relative Inequality

In order to understand better the observed cross sectional pattern, a number of authors have recently tried to relate the income distribution observed in a country to that country's economic characteristics. Three particularly noteworthy studies are reviewed in this section.

1. Adelman and Morris (1973).

Perhaps the best known work in this area is that of Adelman and Morris (1973), based on cross sectional observations for 43 less developed countries.

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[1] In the individual country data collected by Paukert, define six dummy variables denoting income class, the first for GDP per capita between $101 and $200, the second between $201 and $300, and so on. The reason for

-continued on next page-

- footnote continued from previous page -

defining only six dummy variables when there are seven categories is to avoid perfect multicollinearity in the regression equation reported below.) For each, let us assign the value one if the country's GDP places it in that category, zero otherwise. If we then run a multiple regression with the Gini coefficient of inequality as the dependent variable and these six dummies as independent variables, the coefficients on the dummy variables may be interpreted as the effect on the Gini coefficient of being in that income group rather than in the $0 - 100 per capita income group. If the inverted-U hypothesis is correct, these coefficients will be positive and increasing up to some point, declining thereafter.

The results of the regression based on the figures for 56 countries were:

$$\begin{aligned} GINI = .418 &+ \underset{(.042)}{.050}\, Y_{\$101-200} + \underset{(.039)}{.080}\, Y_{\$201-300} \\ &+ \underset{(.040)}{.076}\, Y_{\$301-500} + \underset{(.045)}{.019}\, Y_{\$501-1,000} \underset{(.039)}{-.019}\, Y_{\$1,000-2,000} \\ &- \underset{(.057)}{.052}\, Y_{\$2,001} + \\ &R^2 = .22 \end{aligned}$$

where Y denotes GDP per capita (standard errors in parentheses). The pattern of regression coefficients is consistent with the pattern predicted by the inverted-U hypothesis, i.e., rising at first and then falling. However, the initial stage of rising inequality is <u>not</u> statistically significant at any of the conventional levels. (Compare, say, the first three regression coefficients with their standard errors.)

Worse still for Kuznets, Paukert, and other adherents of the inverted-U hypothesis are the results of a simple parabolic regression. The inverted-U hypothesis may be tested by regressing the Gini coefficient on Gross Domestic Product (GDP) per capita and GDP per capita squared. If the relationship is in fact of the inverted-U form, GDP per capita would have a positive coefficient, and GDP per capita squared a negative coefficient. The regression results were:

$$GINI = .473 - \underset{(.56)}{.00003}\, GDP - \underset{(.34)}{.00000}GDPSQUARED,\ R^2 = .11$$

(t statistics in parentheses)

The negative coefficient on GDP in Paukert's data is contrary to the initial-worsening hypothesis.

This result is not robust to the choice of inequality measure or data set. Cline (1975) reports the results of a similar regression using Adelman and Morris' data rather than Paukert's, and using as the measure of inequality

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(I) the ratio of the income share of the top quintile to the share of the bottom quintile. His results, with t statistics reported in parentheses, were:

$$I = 7.23 + 0.0258GNP - 0.000014GNPSQUARED, \quad R^2 = 0.12.$$
$$\qquad\qquad (2.7) \qquad\quad (2.8)$$

In any case, the initial-worsening hypothesis receives at best only limited support in the data.

Concerning the inevitability issue (the view that "income distribution must get worse before it gets better"), we should note how little of the variance in relative inequality is explained by income level. In the dummy variable regression, income level can explain only 22 percent of the inter-country variation in inequality as measured by the Gini coefficient, and in the parabolic regression, only 11 percent. This means, very simply, that the inverted-U is avoidable.

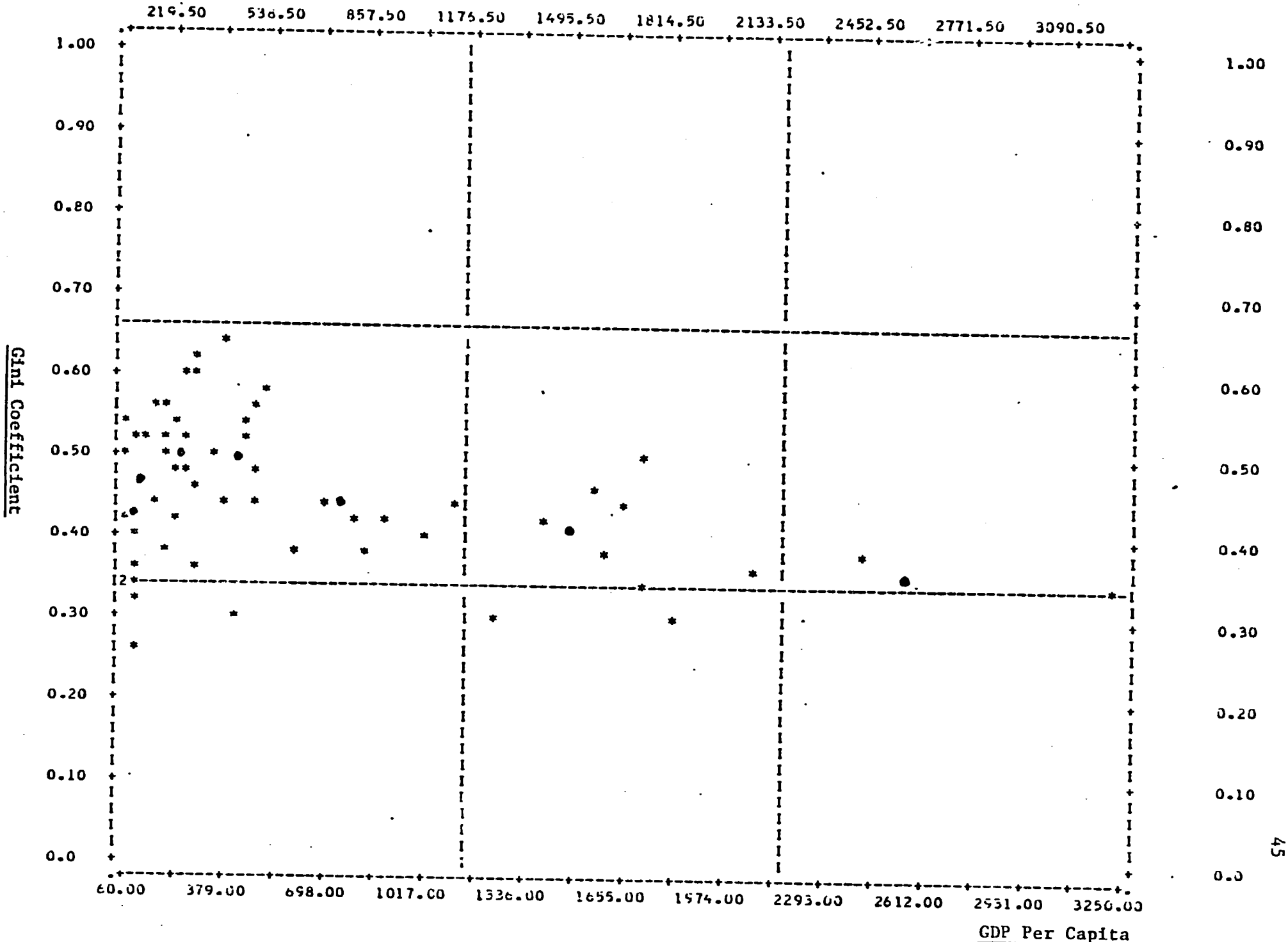
[End of Footnote]

TABLE 3 SIZE DISTRIBUTION OF PERSONAL INCOME BEFORE TAX IN 56 COUNTRIES: INCOME SHARES RECEIVED BY QUINTILES OF RECIPIENTS IN THE NEIGHBOURHOOD OF 1965

Country and level of GDP per head	Percentiles of recipients						Gini ratio	Maximum equilisation percentage	GDP per head in 1965 (US $)
	Below 20 %	21-40 %	41-60 %	61-80 %	81-95 %	96-100 %			
Under $100									
Chad (1958)	8.0	11.6	15.4	22.0	20.0	23.0	0.35	25.0	68
Dahomey (1959)	8.0	10.0	12.0	20.0	18.0	32.0	0.42	30.0	73
Niger (1960)	7.8	11.6	15.6	23.0	19.0	23.0	0.34	25.0	81
Nigeria (1959)	7.0	7.0	9.0	16.1	22.5	38.4	0.51	40.9	74
Sudan (1969)	5.6	9.4	14.3	22.6	31.0	17.1	0.40	30.7	97
Tanzania (1964)	4.8	7.8	11.0	15.4	18.1	42.9	0.54	41.0	61
Burma (1958)	10.0	13.0	13.0	15.5	20.3	28.2	0.35	28.5	64
India (1956-57)	8.0	12.0	16.0	22.0	22.0	20.0	0.33	24.0	95
Madagascar (1960)	3.9	7.8	11.3	18.0	22.0	37.0	0.53	39.0	92
Group average	*7.0*	*10.0*	*13.1*	*19.4*	*21.4*	*29.1*	*0.419*	*31.6*	*78.3*
$101-200									
Morocco (1965)	7.1	7.4	7.7	12.4	44.5	20.6	0.50	45.4	180
Senegal (1960)	3.0	7.0	10.0	16.0	28.0	36.0	0.56	44.0	192
Sierra Leone (1968)	3.8	6.3	9.1	16.7	30.3	33.8	0.56	44.1	142
Tunisia (1971)	5.0	5.7	10.0	14.4	42.6	22.4	0.53	44.9	187
Bolivia (1968)	3.5	8.0	12.0	15.5	25.3	35.7	0.53	41.0	132
Ceylon (Sri Lanka) (1963)	4.5	9.2	13.8	20.2	33.9	18.4	0.44	32.5	140
Pakistan (1963-64)	6.5	11.0	15.5	22.0	25.0	20.0	0.37	27.0	101
South Korea (1966)	9.0	14.0	18.0	23.0	23.5	12.5	0.26	19.0	107
Group average	*5.3*	*8.6*	*12.6*	*17.5*	*31.6*	*24.9*	*0.468*	*37.2*	*147.6*
$201-300									
Malaya (1957-58)	6.5	11.2	15.7	22.6	26.2	17.8	0.36	26.6	278
Fiji (1968)	4.0	8.0	13.3	22.4	30.9	21.4	0.46	34.7	295
Ivory Coast (1959)	8.0	10.0	12.0	15.0	26.0	29.0	0.43	35.0	213
Zambia (1959)	6.3	9.6	11.1	15.9	19.6	37.5	0.48	37.1	207
Brazil (1960)	3.5	9.0	10.2	15.8	23.1	38.4	0.54	41.5	207
Ecuador (1968)	6.3	10.1	16.1	23.2	19.6	24.6	0.38	27.5	202
El Salvador (1965)	5.5	6.5	8.8	17.8	28.4	33.0	0.53	41.4	249
Peru (1961)	4.0	4.3	8.3	15.2	19.3	48.3	0.61	48.2	237
Iraq (1956)	2.0	6.0	8.0	16.0	34.0	34.0	0.60	48.0	285
Philippines (1961)	4.3	8.4	12.0	19.5	28.3	27.5	0.48	35.8	240
Colombia (1964)	2.2	4.7	9.0	16.1	27.7	40.4	0.62	48.0	275
Group average	*4.8*	*8.0*	*11.3*	*18.1*	*25.7*	*32.0*	*0.499*	*38.5*	*244.4*
$301-500									
Gabon (1960)	2.0	6.0	7.0	14.0	24.0	47.0	0.64	51.0	368
Costa Rica (1969)	5.5	8.1	11.2	15.2	25.0	35.0	0.50	40.0	360
Jamaica (1958)	2.2	6.0	10.8	19.5	31.3	30.2	0.56	41.5	465
Surinam (1962)	10.7	11.6	14.7	20.6	27.0	15.4	0.30	23.0	424
Lebanon (1955-60)	3.0	4.2	15.8	16.0	27.0	34.0	0.55	41.0	440
Barbados (1951-52)	3.6	9.3	14.2	21.3	29.3	22.3	0.45	32.9	368
Chile (1968)	5.4	9.6	12.0	20.7	29.7	22.6	0.44	33.0	486
Mexico (1963)	3.5	6.6	11.1	19.3	30.7	28.8	0.53	39.5	441
Panama (1969)	4.9	9.4	13.8	15.2	22.2	34.5	0.48	36.7	490
Group average	*4.5*	*7.9*	*12.3*	*18.0*	*27.4*	*30.0*	*0.494*	*37.6*	*426.9*
$501-1 000									
Republic of South Africa (1965)	1.9	4.2	10.2	26.4	18.0	39.4	0.58	43.7	521
Argentina (1961)	7.0	10.4	13.2	17.9	22.2	29.3	0.42	31.5	782
Trinidad and Tobago (1957-58)	3.4	9.1	14.6	24.3	26.1	22.5	0.44	32.9	704
Venezuela (1962)	4.4	9.0	16.0	22.9	23.9	23.2	0.42	30.6	904
Greece (1957)	9.0	10.3	13.3	17.9	26.5	23.0	0.38	29.5	591
Japan (1962)	4.7	10.6	15.8	22.9	31.2	14.8	0.39	28.9	838
Group average	*5.1*	*8.9*	*13.9*	*22.1*	*24.7*	*25.4*	*0.438*	*32.9*	*723.3*
$1 001-2 000									
Israel (1957)	6.8	13.4	18.6	21.8	28.2	11.2	0.30	21.2	1 243
United Kingdom (1964)	5.1	10.2	16.6	23.9	25.0	19.0	0.38	28.1	1 590
Netherlands (1962)	4.0	10.0	16.0	21.6	24.8	23.6	0.42	30.0	1 400
Federal Republic of Germany (1964)	5.3	10.1	13.7	18.0	19.2	33.7	0.45	32.9	1 667
France (1962)	1.9	7.6	14.0	22.8	28.7	25.0	0.50	36.5	1 732
Finland (1962)	2.4	8.7	15.4	24.2	28.3	21.0	0.46	33.5	1 568
Italy (1948)	6.1	10.5	14.6	20.4	24.3	24.1	0.40	28.8	1 011
Puerto Rico (1963)	4.5	9.2	14.2	21.5	28.6	22.0	0.44	32.1	1 101
Norway (1963)	4.5	12.1	18.5	24.4	25.1	15.4	0.35	24.9	1 717
Australia (1966-67)	6.6	13.4	17.8	23.4	24.4	14.4	0.30	22.2	1 823
Group average	*4.7*	*10.5*	*15.9*	*22.2*	*25.7*	*20.9*	*0.401*	*29.0*	*1 485.2*
$2 001 and above									
Denmark (1963)	5.0	10.8	18.8	24.2	26.3	16.9	0.37	25.4	2 078
Sweden (1963)	4.4	9.6	17.4	24.6	26.4	17.6	0.39	28.6	2 406
United States (1969)	5.6	12.3	17.6	23.4	26.3	14.8	0.34	24.5	3 233
Group average	*5.0*	*10.9*	*17.9*	*24.1*	*26.3*	*16.4*	*0.365*	*26.2*	*2 572.3*

Source: Paukert (1973, Table 6).

FIGURE 2. GINI COEFFICIENT AND GROSS DOMESTIC PRODUCT PER CAPITA, 56 COUNTRIES



Source: Computed from data in Paukert (1973).

To measure income inequality, they used three alternative figures: the income share of the lowest 60%, the income share of the middle quintile, and the income share of the richest 5%. They report six variables as important in determining the distribution of income in a country:

1. Rate of improvement in human resources.
2. Direct government economic activity
3. Socioeconomic dualism
4. Potential for economic development
5. Per capita GNP
6. Strength of labor movement

Interestingly, no significant relationship is found between relative income inequality and short-term economic growth rates, short-term economic improvements in tax and financial institutions, or short-term increases in agricultural or industrial productivity. The interested reader is referred to their book for the proxy variables used and their specific definitions.

The Adelman-Morris exercise has been subjected to a great deal of criticism, including doubts about the quality of the underlying data, discomfort over the lack of a well-defined theoretical framework, and skepticism about the appropriateness of the statistical methodology employed. Were we to explore these criticisms, we would drift far away from the thrust of this paper. I would just record my concurrence with many of these criticisms and my hesitancy in accepting Adelman and Morris' conclusions on the importance of the six factors listed above and the unimportance of others not in that list.

2. Chiswick (1971).

A second study of causes of relative inequality, somewhat earlier than that of Adelman and Morris but less well-known, is that of Chiswick (1971).

Using an elementary human capital model, Chiswick deduced that variability in earned income should be functionally related (positively) to four factors:

1. The inequality of investment in human capital;

2. The average level of investment in human capital;

3. The average level of the rate of return to human capital investment;

4. The inequality in the rate of return to human capital investment.

He then subjected these hypotheses to empirical testing in a cross section of nine countries, four of which are less developed.

Unfortunately, (1) there is a scarcity of data to test the model, and (2) what data there are (from Lydall (1968)) prove inconclusive. In Chiswick's regressions, the variable measuring inequality of educational attainments is statistically significantly related (with the correct sign) to earnings inequality in two out of three cases. The variables for average per capita GNP and rate of growth of GNP prove to be insignificant, with one exception. Thus, the hypotheses derived from the human capital model of earnings inequality receive only limited empirical support. Whether this weakness is due to limitations of the data or of Chiswick's specific formulation is an open question awaiting additional examination.

3. Ahluwalia (1976).

Finally, there is the recent work at the World Bank by Ahluwalia (1976). As noted before, his information is cross country data from 62 countries. For alternative measures of relative income inequality, he used the percentage income shares of the top twenty percent, middle forty percent, lowest forty percent, and lowest sixty percent. His multiple regressions produced the following results:

1. There is a statistically significant relationship between these income shares and the logarithm of per capita GNP, entered linearly and quadratically; the form of the relationship supports the inverted-U pattern.

2. However, there does not appear to be an independent short term relationship between the level of inequality and the rate of growth of GNP.

3. The explanatory variables associated with income inequality are the rate of expansion of education, the rate of decline of demographic pressures, and changes in the structure of production in favor of the modern sector. More specifically, improvement in literacy, reduced rate of growth of population, reduced share of agriculture in national product, and shifting of population to the urban sector are found to reduce relative income inequality in the cross section.

Subject to the limitations of the underlying data, which I discuss elsewhere in this paper, the Ahluwalia study is carefully done and offers a reasonable set of stylized facts about the patterns of relative income inequality and their correlates in the cross section. How much we wish to make of these findings is discussed further in Section C.

4. Conclusions.

The studies by Adelman and Morris, Chiswick, and Ahluwalia suggest that the usual concomitants of economic development (in particular, improved education, reduction in the importance of agriculture, and growth of the urban sector) significantly lower relative income inequality in the cross section. The evidence is mixed on the level of economic development itself, Ahluwalia and Adelman and Morris finding a statistically significant relationship between relative inequality and per capita GNP, Chiswick finding these effects insignificant. None of these studies finds a statistically significant relationship between the level of inequality and the rate of economic growth. They also fail to establish the importance of tax systems and agricultural productivity improvements.

C. A Caveat About Cross-Sectional Studies

The information presented in the preceeding two subsections and the conclusions derived therefrom are drawn from cross-sectional analysis. These studies follow a long tradition, pioneered at Harvard University in the la decade, of deriving conclusions about the process of economic development by looking at countries at different stages of development.[1] The maintained assumption of such analysis is that currently-developing countries will follow much the same pattern in their development experiences as is found in the cross section. This requires a leap of faith which many, myself included, would be unwilling to make.

Frankly, I question the merit of this whole line of reasoning. It would be better to investigate the direct evidence on changes in income distribution within a given country at two or more points in time in that country's development history. We take this up in Section D.

D. Evidence on Historical Trends Within a Country Over Time

The evidence on historical trends in income distribution within a country over time is scattered and has not yet been synthesized in a multi-country study. Much of the research is as yet unpublished, and many more studies are now in progress. In what follows, I shall survey the major multi-country studies on this question.

1. Kuznets' Study of Nine Now-Developed Countries.

Once again, the pathbreaking contribution in the field is that of Professor Kuznets. In his 1963 paper, Kuznets reviewed the available evidence for a number of now-developed countries. The highlights of his income distribution estimates are shown in Table 4 .

Kuznets' data show that for two countries (Prussia and Saxony in the

[1] Kuznets' early work was of that sort. Later, that mode of analysis was carried on by Chenery and others in a series of studies on the patterns of economic growth. See, for example, Chenery (1960), Chenery and Taylor (1968), and most recently Chenery and Syrquin (1975).

late 1800s), the income share of those at the top of the income distribution had either risen or remained the same. However in the other countries (United Kingdom, Germany, Netherlands, Denmark, Norway, Sweden, and the United States), the data show a steady decline in relative inequality, as measured by the income shares of the top 5% and lowest 60%. Interestingly, this is not the usual lesson drawn from Kuznets' research. He is widely thought to have said that "income distribution must get worse before it gets better" (the"inverted-U hypothesis"). And indeed he did say that! He wrote (Kuznets (1963, p. 67)): "It seems plausible to assume that in the process of growth, the earlier periods are characterized by a balance of counteracting forces that may have widened the inequality in the size distribution of income for a while..." (emphasis added). Indeed, it is an assumption, at least as far as I could tell from a careful reading of Kuznets' 1963 paper and his earlier work in 1955. I looked in vain for statistical evidence documenting these patterns in the actual historical experiences of any of the nine countries in Table 4 . Yet, these two papers are among the best-known in the income distribution field and are widely-cited as providing empirical support for the inverted-U hypothesis.

Kuznets' writings naturally stimulated a great deal of interest among development economists who asked what the facts of the matter were in the countries which were still less developed. Several such studies have appeared in the last six years. We now consider the evidence from two of the most important studies.

2. Weisskoff's Study of Puerto Rico, Argentina, and Mexico

The first multi-country historical study of the patterns of income distribution change in less developed countries was the paper by Weisskoff (1970) for Puerto Rico, Argentina, and Mexico.[1] Weisskoff's paper includes

[1]The study by Swamy (1967) preceeded Weisskoff's, but it was limited to a single country (India).

TABLE 4

LONG-TERM ESTIMATES OF SHARES OF ORDINAL GROUPS IN SELECTED COUNTRIES.

Changes in Inequality Over Time		Country / Successive Dates and Entries								
		United Kingdom								
	1. Dates	Bowley 1880	Bowley 1913	Clark 1929	Seers 1938	Seers 1947	Lydall 1938	Lydall 1949	Lydall 1957
	Income before tax								
	2. Top 5%	48	43	33	31	24	29	23.5	18
Decline	3. Top 20%	58	59	51	52	46	50	47.5	41.5
	Income after tax								
	4. Top 5%				26	17	24	17	14
	5. Top 20%				48	39	46	42	38

		Prussia					
		Procopovitch				Reich Statistical Office	
	6. Dates	1854	1875	1896	1913	1913	1928
Rising inequality at first, possible decline later	7. Top 5%	21	26	27	30	31	26
	8. Top 20%		48	45	50	50	49
	9. Lowest 60%		34		33	32	31

		Mueller				
		1873-80	1881-90	1891-1900	1901-10	1911-13
	10. Dates					
	11. Top 5%	28	30	32	32	31

		Saxony				
		Procopovitch			Reich Statistical Office	
	12. Dates	1880	1896	1912	1913	1928
Slight increase at first, then decline	13. Top 5%	34	36	33	33	28
	14. Top 20%	56	57	55	54	50
	15. Lowest 60%	27	26.5	27	28	31

		Germany-West Germany								
		Reich Statistical Office			Mueller		United Nations		Wochenbericht	
	16. Dates	1913	1928	1928 (adj.)	1928	1936	1936	1950	1955	1959
Decline	17. Top 5%	31	27	21	20	23	28	24	18	18
	18. Top 20%	50	49	45			53	48	43	43
	19. Lowest 60%	32	31	34			26.5	29	34	34

		Netherlands			
	20. Dates	1938	1949	1954	
Decline	21. Top 5%	19	17	13	
	22. Top 20%	49	45.5	38.5	
	23. Lowest 60%	31	34	40	

		Denmark							
		Zeuthen I			Zeuthen II		Bjerke		
	24. Dates	1870	1903	1925	1908	1925	1939	1949	1955
Decline	25. Top 5%	36.5	28	26	30	26	24.5	19	17.5
	26. Top 10%	50	38	36	39	37	35	29.5	27.4
	27. Top 20%				55	53	51	45	44
	28. Lowest 60%				31	25	27	32	32

-continued-

Norway

29. Dates		1907	1938	1948
Decline 30. Top 5%, country districts		27	20	14
31. Top 5%, cities		28-32	22	19

Sweden

	Bentzel		
32. Dates	1930	1935	1945
Earned income before tax			
Decline 33. Top 5%	30	28	24
34. Top 20%	59	58	52
35. Lowest 60%	19	19	23

	United Nations				
36. Dates	1935	1945	1948	1948	1954
Total income before tax					
37. Top 5%	28	23.5	20	20	17
38. Top 20%	56	51	47	45	43
39. Lowest 60%	23	26	29	32	34
Total income after tax					
40. Top 5%	25.5	21	17		
41. Top 20%	54	48	43		
42. Lowest 60%	23	28	32		

United States

	Kuznets				
	1913-	1919-	1929-	1939-	1944-
Decline 43. Dates	19	28	38	43	48
Income before tax					
44. Top 1%	14	14	13	11	9
45. Top 5%	24[a]	25	25	21	17
Income after federal tax					
46. Top 1%	13	13	12	9	6
47. Top 5%	22[a]	24	24	18	14

Successive Dates and Entries

	Department of Commerce					
		1935-		1944-	1950-	1955-
48. Dates	1929	36	1941	47	54	59
Income before tax						
49. Top 5%	30	26.5	24	21	21	20
50. Top 20%	54	52	49	46	45	45
51. Lowest 60%	26	27	29	32	33	32
Income after federal tax						
52. Top 5%	29.5		21.5		18	18
53. Top 20%	54		47		43	44
54. Lowest 60%	26.5		30		34	34

a. 1917-19.

Source: Kuznets (1963, Table 6)

a brief discussion of the traditional measures of relative income inequality including the Gini coefficient, Kuznets ratio, coefficient of variation, variance of the logarithms of income, and standard ordinal shares. After reviewing the strengths and weaknesses of these measures, Weisskoff examined the empirical evidence and concluded (p. 317): "In each of the three developing countries, we noted that equality of income declined as the level of income rose over time." (Note that it is equality which is said to decline, not inequality.) The paper concluded with some speculations as to the causes for this alleged decline.

I have reproduced Weisskoff's data in Table 5. It is interesting to note, in contrast to Weisskoff's interpretation of his own numbers, that the numerical results are in fact quite mixed. In each country, at least one of the relative inequality measures shows an increase and at least one other one a decline. Thus, the effects of economic growth on relative income inequality were ambiguous in these three cases. This result is widely misperceived.

The reported findings of Kuznets and Weisskoff and growing bodies of evidence from cross sectional studies led many observers in the early 1970's to the view that there may be a conflict between the rate of growth of income and equality in the distribution of that income. If so, this would be a harsh dilemma. Further investigation was in order and it was soon forthcoming.

3. Ahluwalia's Multi-Country Study

In an influential paper in an influential volume, Ahluwalia (1974) presented evidence relating the growth of income shares of the lower forty percent to the overall rate of growth of the economies of eighteen countries,

TABLE 5

MEASURES OF INCOME GROWTH AND INEQUALITY IN PUERTO RICO, ARGENTINA, AND MEXICO

		Gini Ratio	Coefficient of Variation	Standard Deviation of Logs
1. Puerto Rico	1953	0.415 ↑	1.152 ↑	0.736 ↑
2. Puerto Rico	1963	0.449	1.035	0.843
3. Argentina	1953	0.412 ↑	1.612 ↑	0.626 ↑
4. Argentina	1959	0.463 ↑ ↑	1.887 ↑ ↑	0.675 ↑ ↑
5. Argentina	1961	0.434	1.605	0.653
6. Mexico	1950	0.526 ↑	2.500 ↓	0.718 ↑
7. Mexico	1957	0.551 ↑ ↑	1.652 ↓ ↓	0.879 ↑ ↑
8. Mexico	1963	0.543	1.380	0.976

Note: Arrows indicate direction of change in inequality according to the indicated measure.

Source: Weisskoff (1970, Table 1).

all but a few of which are less developed. Ahluwalia's study relies on the most extensive compilation of data yet available on income distribution in less developed countries.[1] The observed pattern is reproduced in Figure 3.

Contrary to the prevailing way of thinking on an alleged tradeoff between rate of economic growth and income distribution, the data tell another story. Wrote Ahluwalia (1974, p. 13):

> The scatter suggests considerable diversity of country experience in terms of changes in relative equality. Several countries show a deterioration in relative equality but there are others showing improvement... there is no strong pattern relating changes in the distribution of income to the rate of growth of GNP. In both high-growth and low-growth countries there are some which have experienced improvements and others that have experienced deteriorations in relative equality. [emphasis added]

In his work, Ahluwalia did not attempt to relate the observed changes to countries' economic development strategies (e.g., import-substitution or export promotion). Evidence on this question would be most welcome.

4. Conclusion

The data presented by Kuznets, Weisskoff, and Ahluwalia suggest that the supposed "harsh dilemma" of having to choose between rapid economic growth in the aggregate and equality in the distribution of income might be avoidable. This result is supported by several studies of changing income distribution in individual countries. Two of these studies are of particular interest, for they allow us to look not only at changes in relative income inequality but also at changes in absolute poverty. The evidence for these two countries---Brazil and India---is presented in Section IV below.

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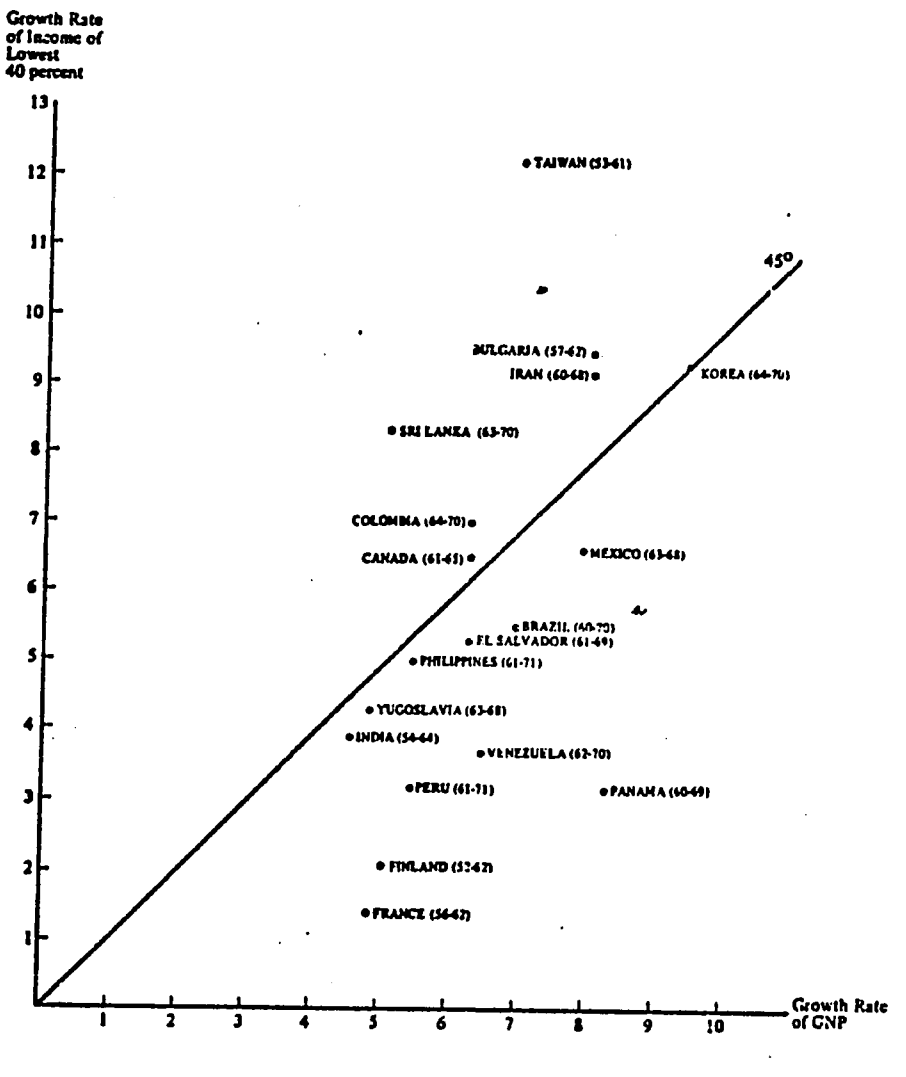
[1] In reporting these patterns, I am not necessarily endorsing the reliability of these figures for the purposes at hand. Ahuwalia himself recognizes that "since individual observations are subject to substantial error, it is perhaps more important to look for patterns in the data."

Figure 3 : Growth and the Lowest 40 Percent



Source: Ahluwalia (1974, p. 14).

E. Conclusion

In summary, relative inequality studies suggest the following stylized facts:

1. In a cross-section of countries, the bulk of the evidence indicates an inverted-U pattern of relative income inequality with the level of economic development.

2. However, countries' income levels explain only a small part of the variability in measured inequality. Other characteristics of the economy also play a role.

3. Among the variables associated with cross-sectional patterns of relative inequality are improved education, growth of the urban sector, and the decline of agriculture. The evidence on the level of national income is mixed. Tax systems and agricultural productivity have not been shown to be important determinants of the cross-sectional pattern.

4. In the cross section, no systematic relationship is found between the rate of growth of the economy and relative inequality.

5. Similarly, changes in the relative income share of the poorest 40% of the population in the historical experience of a given country exhibit no marked association with the economy's growth rate.

6. It may be that certain economic development strategies (e.g., export promotion versus import substitution) tend to be related to changes in the relative income distribution, but no systematic evidence has been gathered on this point.

IV. ABSOLUTE POVERTY VS. RELATIVE INEQUALITY: TWO CASE STUDIES

The preceding section is based on the assumption that figures on relative income inequality provide suitable indicators of changes in economic position of the poor in developing countries. This reflects prevailing practice in studies of LDCs.

As Section II demonstrated, we may instead approach the question of changing income distribution from an absolute poverty perspective. From this point of view, the relevant questions deal with the determinants of incomes in general and of poverty in particular, and how these determinants have changed over time.

It should be obvious that the relative inequality approach and absolute poverty approach do not necessarily agree with one another in assessing the distributional consequences of growth in a particular country. Whether they do or not is an empirical question. The available data permit intensive examination of two countries, Brazil and India, to which we now turn.

A. Brazil

One of the most interesting and controversial cases of economic development is that of Brazil. Over the decade of the 1960s, the real rate of economic growth was 79%. After allowing for a high population growth rate, real income per capita grew at 32% over the decade, a substantial achievement by LDC standards. For the latter years of the 1960s and the first part of the 1970s, Brazil experienced rates of growth approaching 10% per annum. On this basis, the Brazilian case was widely heralded as an "economic miracle."

Then, a sudden cloud appeared on the horizon. In an exceptionally influential paper, Fishlow (1972) examined the distributional question of who received the benefits of this growth. Using the Gini coefficient of inequality and the income share received by the richest 3% of the population,

Fishlow observed a "worsening" of the relative income distribution during the 1960s despite the rapid economic growth of the latter years. A similar qualitative conclusion was reached subsequently by Adelman and Morris (1973, p. 1) based on the income share of the poorest 40%. Some of the data underlying these conclusions are presented in Table 6.

The finding that income inequality in Brazil had become greater gave pause to many. As a result, there is now widespread disagreement about the desirability of taking Brazilian economic and social policies as a model for other developing countries to follow. It is probably fair to say that, because of Fishlow's paper, the Brazilian experience is no longer regarded by most observers as "miraculous."

It should also be noted that many economists in the field, although not Fishlow himself, inferred from this evidence that the growth which had taken place had been at the expense of the poor; see, for instance, Foxley (1975). A softer inference from the Brazilian data is that the poor did not share in the benefits of Brazilian growth. I submit that both inferences are incorrect and arise from the use of relative inequality rather than absolute poverty measures. Let me now support this contention. The conclusions which follow are drawn from another paper [Fields (1977)], to which the reader is referred for additional details.

I should begin by pointing out that my research used Fishlow's own data. I did not challenge any of the underlying numbers. To make absolute poverty comparisons, we need data on changes in the number of persons with incomes below a constant real poverty line defined according to Brazilian standards and the average incomes among them.[1] For this purpose, Fishlow's data do not quite suffice, since they are expressed in current rather than constant cruzeiros. Hence, exactly comparable figures cannot be calculated

[1]Following Fishlow's precedent, I took the poverty line to be the minimum wage in the poorest region of the country (the Northeast).

TABLE 6

DATA ON INCOME DISTRIBUTION IN BRAZIL

	1960	1970
Gini Coefficient of Inequality, Total Economically Active Population[a]	0.59	0.63
Income Share of Richest 3.2%[a]	27%	33%
Income Share of Poorest 40%[b]	10%	8%

a) Source: Fishlow (1972)

b) Source: Adelman and Morris (1973).

from published sources, so an approximation is needed. I adopted a simple linear scheme.[1]

The derived data clearly demonstrate that the cumulative percentage of population was lower in 1970 than in 1960 for every income bracket, as may be seen in Figure 4 . This means that the economic growth which took place in Brazil over the decade of the 1960's reached persons at all income levels, and not just those at the top.

The finding that the absolute income distribution improved came as a surprise to me. To confirm its validity, I looked further. My investigation revealed that the percentage of the economically active population with incomes below the Brazilian poverty level declined during the decade, those who remained poor were less poor than before in real absolute terms, and the rate of growth of income among the poor was at least as great as the rate of growth among the non-poor.

More precisely, my conclusions concerning the changes in income distribution in Brazil in the 1960s were:

(1) The entire income distribution shifted in real terms, benefiting every income class.

(2) There was a small decline in the fraction of the economically active population classified as below the poverty line (according to my estimates, from 37% to 35 1/2%), but those who remained "poor" experienced a marked percentage increase in real income (from one-third to as much as two-thirds higher).

(3) The percentage increase for those below the poverty line was greater than the increase for those not in poverty, and may well have been twice as high or more.

(4) The relative income gap between "poor" and "non-poor" persons narrowed in terms of ratios although the absolute gap widened.

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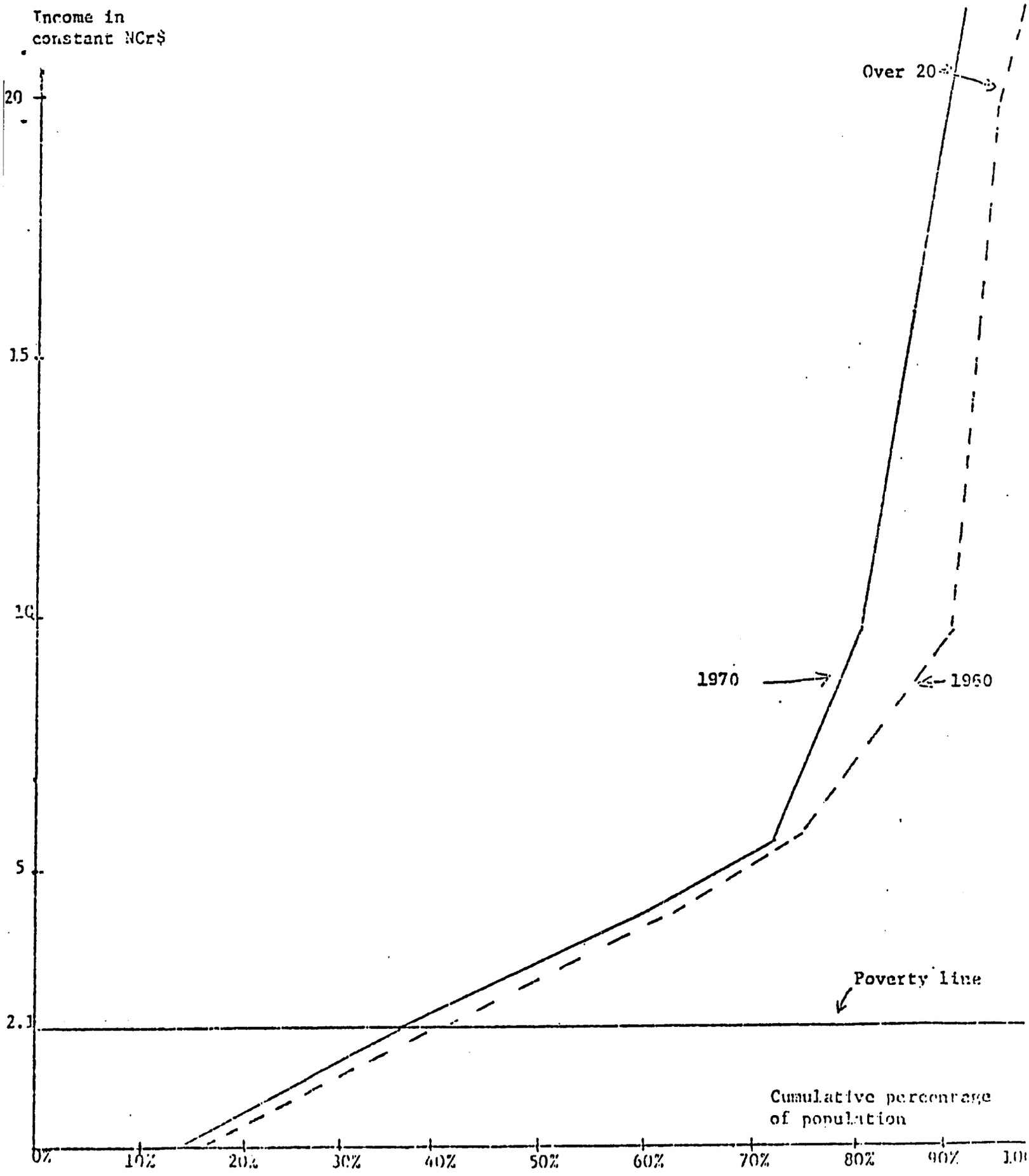
[1] For more details, see Section V.B. below.

FIGURE 4. BRAZILIAN SIZE DISTRIBUTION OF INCOME, 1960 AND 1970



Source: Fields (1977).

(5) The bulk of the income growth over the decade accrued to persons above the poverty line. A similar pattern is observed for the United States, an allegedly more egalitarian society.

(6) The poverty gap in Brazil was reduced by 41% between 1960 and 1970. The United States reduced its poverty gap by exactly the same percentage over the same decade.

The interested reader is referred to the paper for the evidence supporting these conclusions and the details of the calculations.

In summary, my reexamination of the income distribution data from Brazil showed that the poor in Brazil <u>did</u> benefit from the economic growth that took place during the 1960s.[2] In light of the rising Gini coefficients and income shares of the very rich, the finding that <u>the same data</u> are consistent with non-trivial improvements in the economic position of the poor is a startling one. However one regards the Brazilian model of development, emiseration of the poor was not one of its features. In this case, exclusive reliance on relative inequality comparisons led many to overlook important tendencies toward the allevation of absolute poverty.

We shall consider the implications of the Brazilian findings further after reviewing changes in relative income and absolute poverty patterns in India, where the situation is quite different.

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[1]The poverty gap is the total cumulative income shortfall of the poor, i.e., the sum of the differences between each poor person's income and the poverty line.

[2]In stating this conclusion, I in no way wish to condone either the persistence of the severe poverty that remains, or the apparent lack of a strong commitment by the Brazilian authorities to alleviate the current plight of the poor in this generation, or some of the more authoritarian measures reputed to have been used to assure social stability.

B. India

India is, of course, a very poor country which is growing very slowly.[1] As noted in the description of income distribution data in Appendix II, India offers abundant data on the distribution of income and consumption dating back to the 1950's. Given the richness of the data in so poor a country with so large a research establishment, it is not surprising that we find a multitude of income distribution studies. Some of the findings from some of the more important of these are reported in Table 7 .

The data in Table 7 differ with respect to the concept of income or consumption employed, the procedures by which the figures were derived, and the years for which the distributions were estimated. The remarkable feature about the relative inequality data is that no clear pattern of change emerges. More specifically:

(1) Overall, as measured by the Gini coefficient, relative income inequality shows no particular trend.[2]

(2) The Gini coefficient within the urban sector may have risen somewhat, suggesting greater inequality, but the evidence is mixed.

(3) The Gini coefficient within the rural sector seems to have declined, suggesting lesser inequality, but as with the urban Gini coefficient, no strong tendency is found.

(4)Possibly, the income share of the bottom 20% rose and the share of the top 20% fell nationwide, together suggesting diminished inequality, but both changes are small.

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[1] Per capita income is under $100. During the 1960's, per capita private consumer expenditure grew by less than 1/2 % per annum; see Dandekar and Rath (1971, p. 40).

[2] Since Lorenz curves crossed, other relative inequality measures would probably have yielded similarly inconclusive results.

TABLE 7. ESTIMATES OF RELATIVE INCOME INEQUALITY IN INDIA, VARIOUS YEARS AND STUDIES

A. Study by Bhatty (1974) — Data from NCAER

Income Distribution Measure	Year 1961-62	1964-65	1967-68	1968-69
Gini Coefficient of Household Income Distribution, Rural India	0.41	0.35	0.46	0.43

B. Study by Ojha-Bhatt (1974) -- Data from NSS and National Accounts

Income Distribution Measure	Year 1953-55	1963-65
Share in Personal Disposable Income		
Bottom 20%	7%	7%
Top 20%	50%	48%
Gini Coefficient		
National	0.371	0.375
Urban	0.392	0.448
Rural	0.341	0.319

C. Study by Ranadive (1973) -- Data from NSS and National Accounts

Income Distribution Measure	Year 1953-54	1961-62
Share of Total Personal Disposable Income		
Bottom 20% - Estimate A	7.50%	7.80%
Bottom 20% - Estimate B	7.20%	7.60%
Top 20% - Estimate A	44.34%	45.47%
Top 20% - Estimate B	45.89%	46.70%
Gini Coefficient		
Rural	0.340	0.317
Urban	0.453	0.487

TABLE 7 (Continued)

D. Study by Ahmed and Bhattacharya (1972) --

Income Distribution Measure	Data from NSS and National Accounts	
	Year	
	1956-57	1963-64
Share of Pre-Tax Personal Income		
Bottom 20%	6.9%	7.6%
Top 20%	49.4%	45.6%
Gini Coefficient	0.418	0.372

E. Study by Bardhan (1974) --

Income Distribution Measure	Data from NSS				
	Year				
	1958-59	1960-61	1963-64	1967-68	1968-69
Gini Coefficient of Common Exp.					
Rural	0.340	0.321	0.297	0.293	0.310
Urban	0.348	0.350	0.360	0.345	0.350

Source: Bardhan (1974).

In summary, given the inconclusiveness of the individual findings, the contradictory indications as to whether inequality increased or decreased, and the small magnitudes of the changes as compared with probable errors in sampling and measurement, it appears warranted to conclude that the pattern of relative inequality in India remained essentially unchanged.

A leading Indian economist, P.K. Bardhan, takes issue with relative inequality measurements of income distribution. He contends: "For a desparately poor country like India, there are many who believe that no measure of inequality which is in terms of relative distribution and is independent of some absolute poverty standard can be entirely satisfactory."[1] Accordingly, he has calculated estimates of the percentage of the population below a constant absolute poverty line: Rs. 15 per capita per month at 1960-61 prices in the rural sector, Rs. 18 in the urban sector.[2] The results are striking:

Year	Percentage of People with Incomes Below the Poverty Line	
	Rural	Urban
1960-61	38%	32%
1964-65	45%	37%
1968-69	54%	41%

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[1] Bardhan (1974, p. 119).

[2] In Bardhan (1974, pp. 119-124), he describes how these poverty lines are computed. The minimally-adequate diet for a moderately active adult as recommended by the Central Government Employees Pay Commission consists of 15 oz. of cereals, 3 oz. of pulses, 4 oz. of milk, 1.5 oz. of sugar and gur, 1.25 oz. of edible oils, 1 oz. of groundnut and 6 oz. of vegetables per day, totaling 2100 calories and 55 grams of protein. To figure the family income required to achieve this diet, Bardhan works out the cost per adult, adjusts for family make-up by the adult-equivalent ratio, expands to a requisite family income figure using the ratio of food to non-food expenditures, divides by family size to obtain a per capita amount, and finally deflates by the official Agricultural Labour Consumer Price Index for the appropriate year for the rural poor and by the official Working Class Consumer Price Index for the urban poor.

Absolute poverty worsened greatly in India between 1960-61 and 1968-69 even though relative inequality did not.[1] (Note particularly the comparison with Bardhan's own relative inequality estimates in part E of Table 7.)

Once again, as in the case of Brazil, relative inequality measures are found to suggest one set of conclusions with respect to changing income distribution while absolute poverty comparisons suggest another. Interestingly, the nature of the discrepancy is exactly reversed: more absolute poverty despite apparently constant relative inequality in India, alleviation of absolute poverty despite rising relative inequality in Brazil. These discrepancies are disturbing indeed.

C. Conclusion

The results of this section suggest that the choice of a relative or absolute approach does make an important qualitative difference. Data from Brazil suggest a "worsening" of the income distribution, insofar as the Gini coefficient was noticeably higher in 1970 as compared with 1960, the share of income received by the very richest rose, and the share received by the very poorest appears to have fallen. However, using an explicitly poverty-oriented approach focusing on absolute rather than relative incomes, we find that the poor in Brazil do seem to have shared in economic development, albeit to a limited extent. Among other things, the percentage increase in income of those below a Brazilian poverty line was at least as great and possibly double the percentage increase of those above the line.

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[1] Bardhan (1974, p. 131) notes: "The direction of change in the estimates of poverty is the same if one takes the various alternative minimum standards for the poverty line suggested in the literature." (Emphasis in the original.)

In India, the situation is quite different. Relative income inequality did not change noticeably. Some observers have inferred from this that although India did not grow very fast it had at least "held the line" on income distribution. When the figures are re-examined from an absolute poverty perspective, we see that they did not hold the line at all. Rather, absolute poverty increased considerably.

The main lesson from this body of research is that it is not desirable to use relative income measures to indicate changes in absolute poverty among the poor in developing countries, or for that matter, to assess "commitment" and "progress" in reducing poverty. If one wants to measure progress toward the alleviation of absolute poverty, it is more appropriate to use absolute poverty measures such as the number of individuals or families with incomes below a constant real poverty line or the average gap between the income of the poor and poverty line. Depending on the class of measure used, the results look very different.

Can the absolute poverty measurement approach readily be implemented? We turn now to a description of the available data on income distribution in less developed countries.

V. IMPLEMENTING THE ABSOLUTE POVERTY APPROACH TO INCOME DISTRIBUTION

In the preceding parts of this paper, I have argued that a country's progress in alleviating poverty is best gauged by a measure designed especially for that purpose. Several such absolute poverty measures are now in existence. The objective of this section is to consider how to implement the absolute poverty approach. We proceed in four steps, first describing what is needed, then demonstrating how the approach has been applied in Brazil, then outlining the present availability of data in LDCs, and finally exploring ways to close the gap between data needs and data availability.

A. What is Required to Implement the Absolute Poverty Approach

In broad outline, the absolute poverty approach requires that we first define a time-invariant real income figure, which we agree to call the poverty line. Next, we must obtain information on the number of persons (or families) with incomes below that line and the average income among them. In addition, we may wish to know the degree of income inequality among the poor. Finally, so that we can measure the extent to which poverty has been alleviated (or not) in a particular country's economic development, we must have sufficiently comparable and detailed figures on the size distribution of income for at least two time periods, and preferably more. Let us consider each of these points.

(1) Defining the Absolute Poverty Line.[1] Conceptually, the absolute poverty line should be defined in such a way that we would have little hesitancy in regarding an individual or family with income below that figure as poor. A straightforward way of doing this is to establish a dollar income figure, chosen in as scientific a way as possible. In the United States, for example, the poverty line was derived by ascertaining

[1] For a thoughtful review of the issues treated in this section, see Webb (1976).

the amount of money needed to purchase a nutritionally adequate diet consistent with the food preferences of the poorest groups in the population, and then to multiply this figure by a factor of three, since the poor spend about 1/3 of their income on food.[1] To cite some LDC examples, in Brazil, the poverty line is taken to be the minimum wage in the Northeast (Brazil's poorest region), adjusted in other parts of the country for cost-of-living differences.[2] Another LDC example, based on consumption rather than income, is found in work by Musgrove and Ferber (1976). In both cases, the specific income figure depends on family size. In India, the Planning Commission used a figure of Rs.20 per month (in 1960-61 prices) per capita as the nutritionally-minimal standard. This figure was modified by other researchers: Dandekar and Rath (1971) took Rs.15 per capita per month for rural poverty and Rs.22 1/2 for urban, while Bardhan (1970, 1974) used Rs.15 and Rs.18 respectively.[3] The World Bank has estimated the population below U.S. $50 per capita,[4] and A.I.D. has suggested an international poverty line of U.S. $150 per capita.[5] The bases for these choices are unclear. Data on the extent of absolute poverty according to the World Bank and A.I.D. poverty lines are presented in Tables 8 and 9 respectively.[6]

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[1] Orshansky (1965).

[2] Fishlow (1972).

[3] These figures are reported in Bardhan (1974, pp. 119-123), which also contains the specifics of the nutritional factors and price indices entering into the calculations.

[4] Ahluwalia in Chenery et. al. (1974).

[5] A.I.D. (1975).

[6] These figures are computed using official exchange rates. The extent of absolute poverty is highly sensitive to this choice of methodology. Webb (1976) reports a calculation by Selowsky (1976) for Colombia using the price comparisons suggested by Kravis (1975). Selowsky's findings indicate 20.8% of the urban families in Colombia with per capita incomes below U.S.$100 when the official exchange rate is used, but only 5.3% using the Kravis rate.

Provided that the poverty line chosen bears a reasonable relationship to living standards in the country in question, I see little payoff to worrying about what the exact dollar figure should be.[1] Absolute income standards like $150 per capita or the minimum wage in the country are quite reasonable benchmarks.

What is important, indeed crucial, about the absolute poverty line in a dynamic development context is that it be held constant in real terms (i.e., after adjusting for inflation). No other adjustment (e.g., for productivity growth) is appropriate.[2]

In empirical research, as a check on the arbitrariness of any given poverty line, one might experiment with simple multiples of that line, as Bardhan did in India, to test whether similar changes in the incidence and severity of poverty are found. In this way, disputes over the correctness of any specific poverty line definition are minimized and attention is directed where it should be, namely, at the constancy of the line itself and the distribution of the population around it.

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[1] By U.S. standards, virtually the entire population of some countries would be classified as poor, whereas by Bangladesh standards, virtually no one in the U.S. would be in poverty.

[2] See Bacha (1976).

TABLE 8 . WORLD BANK ESTIMATES OF POPULATION BELOW POVERTY LINE, 1969.

Country	1969 GNP Per Capita	1969 Population (millions)	Population below $50		Population below $75	
			Millions	% of Total Population	Millions	% of Total Population
LATIN AMERICA						
Ecuador	264	5.9	2.2	37.0	3.5	58.5
Honduras	265	2.5	.7	28.0	1.0	38.0
El Salvador	295	3.4	.5	13.5	.6	18.4
Dominican Republic	323	4.2	.5	11.0	.7	15.9
Colombia	347	20.6	3.2	15.4	5.6	27.0
Brazil	347	90.8	12.7	14.0	18.2	20.0
Jamaica	640	2.0	.2	10.0	.3	15.4
Guyana	390	.7	.1	9.0	.1	15.1
Peru	480	13.1	2.5	18.9	3.3	25.5
Costa Rica	512	1.7	..	2.3	.1	8.5
Mexico	645	48.9	3.8	7.8	8.7	17.8
Uruguay	649	2.9	.1	2.5	.2	5.5
Panama	692	1.4	.1	3.5	.2	11.0
Chile	751	9.6	..	..	..	..
Venezuela	974	10.0	..	..	..	..
Argentina	1054	24.0	..	..	..	..
Puerto Rico	1600	2.8	..	..	..	..
Total	545	244.5	26.6	10.8	42.5	17.4
ASIA						
Burma	72	27.0	14.5	53.6	19.2	71.0
Sri Lanka	95	12.2	4.0	33.0	7.8	63.5
India	100	537.0	239.0	44.5	359.3	66.9
Pakistan (E&W)	100	111.8	36.3	32.5	64.7	57.9
Thailand	173	34.7	9.3	26.8	15.4	44.3
Korea	224	13.3	.7	5.5	2.3	17.0
Philippines	233	37.2	4.8	13.0	11.2	30.0
Turkey	290	34.5	4.1	12.0	8.2	23.7
Iraq	316	9.4	2.3	24.0	3.1	33.3
Taiwan	317	13.8	1.5	10.7	2.0	14.3
Malaysia	323	10.6	1.2	11.0	1.6	15.5
Iran	350	27.9	2.3	8.5	4.2	15.0
Lebanon	570	2.6	..	1.0	.1	5.0
Total	132	872.0	320.0	36.7	499.1	57.2
AFRICA						
Chad	75	3.5	1.5	43.1	2.7	77.5
Dahomey	90	2.6	1.1	41.6	2.3	90.1
Tanzania	92	12.8	7.4	57.9	9.3	72.9
Niger	94	3.9	1.3	33.0	2.3	59.9
Madagascar	119	6.7	3.6	53.8	4.7	69.6
Uganda	128	8.3	1.8	21.3	4.1	49.8
Sierra Leone	165	2.5	1.1	43.5	1.5	61.5
Senegal	229	3.8	.9	22.3	1.3	35.3
Ivory Coast	237	4.8	.3	7.0	1.4	28.5
Tunisia	241	4.9	1.1	22.5	1.6	32.1
Rhodesia	274	5.1	.9	17.4	1.9	37.4
Zambia	340	4.2	.3	6.3	.3	7.5
Gabon	547	.5	.1	15.7	.1	23.0
South Africa	729	20.2	2.4	12.0	3.1	15.5
Total	303	83.8	23.8	28.4	36.6	43.6
Grand Total	228	1200.3	370.4	30.9	578.2	48.2

Note: .. negligible.

Source: Ahluwalia (1974, p. 12).

TABLE 9

Poor majority populations in AID-assisted countries

"POOR MAJORITY" IN AID ASSISTED COUNTRIES, ACCORDING TO PROPORTION OF POPULATION RECEIVING LESS THAN $150 PER CAPITA PER YEAR (1969 PRICES) LISTED BY AID REGION AND BY CONTRIBUTION TO "POOR MAJORITY" POPULATION OF THE REGION [1]

	Total population (millions)	Percent of population receiving $150 per capita	"Poor majority" population (millions)
Near East and South Asia:			
India (64–5)	537.0	91	488.7
Pakistan (including Bangladesh) (66–7)	111.8	72	80.5
Egypt (64–5)	33.3	50	16.6
Turkey (68)	35.2	45	15.9
Sri Lanka (63)	12.5	68	8.5
Tunisia (70)	4.9	52	2.5
Regional subtotal	734.7	83	612.7
East Asia:			
Thailand (62)	34.7	65	22.6
Korea, South (70)	32.0	45	14.4
Philippines (71)	37.1	32	11.9
Vietnam, South (64)	17.9	44	7.9
Regional subtotal	121.7	47	56.8
Africa:			
Sudan (63)	15.2	81	12.3
Tanzania (67)	13.2	91	12.0
Kenya (68–9)	10.8	86	9.3
Madagascar (60)	6.5	88	5.7
Malawi (69)	4.5	96	4.3
Chad (58)	3.2	96	3.1
Senegal (60)	3.8	69	2.6
Dahomey (59)	2.5	94	2.3
Ivory Coast (70)	4.2	45	1.9
Sierra Leone (68–9)	2.5	70	1.8
Zambia (59)	4.2	20	.8
Botswana (71–2)	.6	84	.5
Gabon (68)	.5	22	.1
Regional subtotal	71.7	79	56.7
Latin America:			
Brazil (70)	93.6	45	42.1
Colombia (70)	21.1	42	8.9
Peru (70–1)	13.6	35	4.8
Ecuador (70)	6.1	70	4.3
Dominican Republic (69)	4.3	38	1.6
Chile (68)	9.8	16	1.6
El Salvador (69)	3.5	43	1.5
Honduras (67–8)	2.6	58	1.5
Guatemala (66)	5.2	22	1.1
Uruguay (67)	2.9	23	.7
Jamaica (58)	2.0	27	.5
Costa Rica (71)	1.7	14	.2
Panama (69)	1.5	16	.2
Guyana (55–6)	.8	28	.2
Regional subtotal	168.7	41	69.2
All regions (37 countries)	1,096.8	72.5	795.4

[1] Countries included are the 37 AID-assisted countries for which income distribution data are reported in Shail Jain "Size Distribution of Income: Compilation of Data" IBRD, Bank Staff Working Paper No. 190, November 1974. 27 AID-assisted countries are not included for lack of income distribution data. These are: Afghanistan, Bolivia, Burundi, Cameroon, Central African Republic, Ethiopia, Gambia, Ghana, Guinea, Haiti, Indonesia, Khmer Republic, Laos, Lesotho, Liberia, Mali, Morocco, Nepal, Nicaragua, Niger, Paraguay, Rwanda, Swaziland, Togo, Upper Volta, Yemen Arab Republic and Zaire. But the total 1970 population of these countries was only 242,000,000, compared to 1,097,000,000 for the countries included in the table. The method and sources for the tables are as follows. Population and GDP data are for 1970 (converted to 1969 prices in all cases), except for Pakistan, Sierra Leone, Tanzania, Thailand, India, Senegal, Sudan, South Vietnam, Egypt and Zambia, where the data refer to 1969, and Botswana (1968), Chad (1963) and Dahomey (1967). Dates for the income distribution data are shown in parentheses next to the country in the table. Income distribution data in the IBRD source cited above were presented in the form of income shares accruing to 20 equal subgroups of the population. To calculate the percent of the population receiving an annual per capita GDP below $150 the income share of a subgroup was multiplied by the total GDP figure for that country. This product was then divided by the number of individuals in that subgroup or the total population divided by 20. GDP and population refer to the most recent year for which data are available. Using $150 as a guide, the closest 5 percent interval was located and assuming equal distribution within this interval, the approximate percentage determined. The order in which countries are presented within regions was determined by the magnitude of the poor majority of the population, col. 3.

Source: The source for the population and GDP figures were the "U.N. Statistical Yearbook 69," and the "U.N. Yearbook of National Accounts Statistics 1971, V. III" respectively. GNP deflator indexes found in "Gross National Product," AID, FM/SRD, May 1974, were used to convert all GDP figures to 1969 prices. (Exceptions: Botswana, Jamaica, Sri Lanka Chad, Dahomey, and Guyana. GNP deflators were taken from an appropriate regional table of Africa or Latin America in the "U.N. Statistical Yearbook, 1973.")

Source: A.I.D. (1975).

(2) Adjusting for Inflation. The absolute poverty criterion requires that the population be classified into frequency distributions in which the income brackets are held constant. For this purpose, a price index is needed, preferably one for the typical market basket consumed by the poor. If more than one price index is available (as in Colombia, say, where separate indices are available for blue-collar and white-collar workers), the one corresponding to manual labor is more suitable.

Note that the adjustment of the income distribution data for inflation preceeds calculations of the extent of absolute poverty.

(3) Calculating Changes in Absolute Poverty. To recall, the two most common measures of absolute poverty are the number poor (H) and the gap between their average incomes and the poverty line ($\bar{I}$). In addition, some researchers have looked at the degree of income inequality among the poor, as measured by the Gini coefficient (G_p). Recently, Sen (1976) has proposed a measure which is an amalgam of the above:

$$\pi = H[\bar{I} + (1-\bar{I})G_p).$$

The Sen index, being quite new, has not yet, to my knowledge, been computed in empirical studies.

Having described what is required, let us now see how the absolute poverty approach has been applied. We take the case of Brazil as an example.

B. Application of the Absolute Poverty Approach to Brazil

In Brazil, figures on the size distribution of income are available for 1960 and 1970 from a variety of sources.[1] The published figures need to be adjusted to provide comparable data on the distribution of income in 1960 and 1970 in constant real terms.

[1] See Fishlow (1972), Langoni (1972, 1975), and Jain (1975).

In the Brazilian context, taking the poverty line as NCr. $2,100 in 1960 units, and allowing for an overall inflation factor of 3.53, we need data on the percentage of population below NCr. $7,413 (= $2,100 x 3.53) in 1970 and the incomes of those persons. However, none of the available studies has published distributions displaying this constant poverty line or any other comparable income brackets at the beginning and end of the decade. To proceed with the absolute poverty calculations, in the absence of micro-economic data, approximations must be made.

As I learned from my study of Brazil, approximating income distributions is a tricky business which can get its practitioners into trouble. I used a simple linear interpolation procedure, the details of which are spelled out in the paper itself. In retrospect, the linear procedure was rather a poor way to go about it, and a log-linear or some other approximation might have been more appropriate. In any event, when the precise figures were called into question, I re-estimated the relevant magnitudes and showed that the qualitative conclusions about changes in absolute poverty were robust to <u>any</u> assumption that one might make that is consistent with the data. For more details on this, see Fields (1976a).

Note that these problems of implementing the absolute poverty approach arise only in the <u>published</u> tabulations. They are not <u>inherent</u> difficulties. They could easily be resolved by recourse to the underlying microeconomic data. All that would be required would be to tabulate the population into income groups after first adjusting for an inflation factor; for example, in the Brazil case, by dividing all 1970 incomes by 3.53 so as to be comparable with 1960 incomes, or equivalently, multiplying all 1960 incomes by this same factor. This is something The Central Statistical Office in Brazil

could easily do.

This discussion of the Brazilian case indicates some of the difficulties that may arise in trying to apply the absolute poverty criteria to published data when the tabulated figures are not adjusted for inflation. Let us now consider the availability of data in other countries.

C. Availability of Data in A.I.D.-Recipient Countries

Recent years have witnessed extensive gathering of data on the size distribution of income in less developed countries. The most important compilations include those by:

1. Jain (1975) at the World Bank.
2. Adelman and Morris (1973).
3. Paukert (1973) at the International Labour Office.
4. Altimir (1974), reporting on work under a joint Economic Commission for Latin America-World Bank project.
5. A compendium of six papers---by Choo (1975), Meesook (1975), Rajaraman (1975), Phillips (1975), Urrutia (1975), and Langoni (1975)--- commissioned by the Princeton University-Brookings Institution project on income distribution in less developed countries.
6. Musgrove (1976), reporting on work under the auspices of the Program of Joint Studies of Latin American Economic Integration (ECIEL) in conjunction with the Brookings Institution.

These sources are described in Appendix I.[1]

Table 10 offers a summary view of data availability in A.I.D.-recipient countries based upon these compilations.[2] In addition to the data reported

[1] In addition, A.I.D. (1975) has published estimates of the percentage of population with incomes below $150 per capita for each of 37 A.I.D.-assisted countries. Since the data are derived from Jain (1975), and no new countries are included, this source is omitted from Table 10. Furthermore, the World Bank and the Economic and Social Commission for Asia and the Pacific (ESCAP) are compiling data on income distribution in Pakistan, Iran, India, Nepal, Thailand, Hong Kong, Sri Lanka, Malaysia, and Taiwan; I have not seen any publications deriving from this project.

[2] Table 10 excludes all developed countries and those less developed countries which are not A.I.D.-recipients but which may be included in the compilations.

in Table 10, Appendix II reports more detailed information for a smaller group of countries. These are: Bangladesh, Brazil, Colombia, Ghana, India, Indonesia, Kenya, Korea, Nigeria, Pakistan, Philippines, Sri Lanka, Tanzania, and Thailand. For each of these countries, there is a detailed description of the available data and an evaluation of its suitability for making valid judgments about changes in poverty over time.

The most immediate and striking observation in Table 10 is that for only sixteen of the recipient countries are income distribution data available for two or more points in time. These are: Bangladesh, Brazil, Colombia, Costa Rica, El Salvador, Gabon, India, Ivory Coast, Korea, Pakistan, Panama, Peru, Philippines, Sri Lanka, Thailand, and Tunisia. It is important to notethat the mere availability of data is not sufficient to permit income distribution comparisons. At minimum, definitions of income and coverage of the censuses or surveys must be directly comparable. As far as I can tell, none of the compilations offering income distribution data for more than one point in time has made any attempt to ensure comparability; users of these compiled data therefore do so at their own peril.[1]

Even in the best of circumstances where the data appear reasonably comparable over time, cost-of-living adjustments and interpolations of the

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[1]Regarding data comparability and accuracy, some additional points should be mentioned about particular data sources: (i) The Princeton-Brookings studies describe data sets at various points in time and evaluate them, but they do not present the actual data. (ii) The ECLA-IBRD and ECIEL-Brookings data are presented in common format, but they do not offer comparable data for the same country for more than one point in time. (iii) The Adelman-Morris and Paukert compilations pertain to a single point in time and are not comparable across countries. (iv) The Jain data are derived from a variety of sources under a variety of definitions, and so are not necessarily comparable across countries at any given time or over time within a country.

Table 10

Availability of Size Distribution of Income Data in Six Recent Compilations

	Jain Compilation, 1975, World Bank (a)			Adelman-Morris 1973(b)	Paukert 1973(c)	ECLA-IBRD, 1975 (d)		Princeton-Brookings 1975(e)	ICLL-Brookings 1976(f)
	National	Agricultural/ Rural	Nonagricultural/ Urban			National	Urban or Regional		Urban
Afghanistan									
Bangladesh	63-64(H),66-67(I,H)	63-64(H),66-67(I,H)	63-64(H),66-67(I,H)					63-64 to 67-68	
Benin									
Bhutan									
Bolivia				68(H)	68				
Botswana	71-72(I)								
Brazil	60(I),70(I,H)	60(I),70(I)	60(I),61-62(H),70(I)	60	60		70(I,H)-5 Regions 72(I,H)-6 Regions	60,70	
Burundi									
Cameroon									
Central African Republic									
Chad	58(I)			58	58				
Chile	68(H)	68(I,H)	68(H)	68(H)	68	68(I,H)			68(I,H)
Colombia	62(I),64(I),70(I)	60(I),70(I)	64(I),70(I)	64(H)	64	70(I,H)		67,74-Urban 72-Rural	68 (I,H)
Congo									
Costa Rica	61(H),71(I,H)	61(H),71(H)	61(H),71(H)	69(H)	69	66-67(I,H)	71(I,H)-Urban Areas		
Dominican Republic			69(I,H)						
Ecuador	70(I)	65(I)	68(I,H)	68	68				68(I,H)
Egypt	64-66(H)								
El Salvador	61(I),65-67(I),69(I)	61(I)	61(I)	65(H)	65				
Ethiopia									
Gabon	60(I),68(I)			60	60				
Gambia									
Ghana								no representative survey	
Guatemala		66(H)							
Guinea									
Guyana	55-56(H)								
Haiti									
Honduras	67-68(I,H)	67-68(I,H)	67-68(I,H)			67-68(I,H)			

Key: Number refers to year; (H) denotes household coverage; (I) denotes individual coverage.

Table 10 (continued)

	Jain Compilation, 1975, World Bank (a)		Adelman-Morris 1973(b)	Paukert 1973(c)	ECLA-1970, 1975 (d)		Princeton-Brookings 1975(e)	Lotsch-Brookings 1976(f)
	National	Agricultural/Rural	Nonagricultural/Urban		National	Urban or Regional		Urban
India	53-54 & 54-55(I),53-54 to 56-57(H),60(H),61-62(I), 61-62 & 63-64(I),63-64(I),63-64 & 64-65(I),64-65(I,H),67-68(H)	53-54 & 54-55(I),53-54 to 56-57(H),60(H),61-62 & 63-64(I),63-64 & 64-65(I),64-65(H),67-68(H)	53-54 & 54-55(I),53-54 to 56-57(H),60(H),61-62 & 63-64(I),63-64 & 64-65(I),64-65(H),67-68(H)	56-57(H)	56-57			
Indonesia	71(I)						50-present	
Ivory Coast	59(I),70(I)						no fruitful comparative survey	
Jamaica	59(H)		67(I)	59	59			
Jordan				58(H)	58			
Kenya	69(I)							
Korea	64(H),66(H),69(H),69(H),70(I,H),71(H)	60(H),70(H),71(H)	68-69(H)				68,71-Urban	
Lesotho			66(H),71(H)				63-present-Urban 62-present-Rural	
Liberia								
Malagasy Republic	60(I)							
Malawi	69(H)							
Mali								
Malta								
Mauritania								
Mauritius								
Morocco								
Nepal								
Nicaragua								
Niger								
Nigeria								
Pakistan	63-64(H),66-67(I,H),68-69(I,H),69-70(I,H),70-71(I,H)	63-64(H),66-67(I,H),68-69(I,H), 69-70(I,H),70-71(I,H)	65(I)	65				
Panama	60(I),69(I),70(I),72(I)	68(I)						
Paraguay								
Peru	61(I),61-63(I),70-71(I)		63-64(H),66-67(I,H),68-69(I,H),69-70(I,H), 70-71(I,H)	63-64			67	
Philippines	55(H),62(H),65(H),71(H)	61(H),65(H),71(H)	62(H),68(I),70(I),72(I)	63-64(H)	63-64		63-64 to present	
Rwanda				69(H)	69	70(I,H),72(I,H)		
Senegal	60(I)							
Sierra Leone				61	61	Information forthcoming		68(I,H)
Sri Lanka	53(I,H),63(I,H),69-70(H),73(I,H)	63(I),69-70(H),73(I)	61(H),65(H),71(H)	61	61		Since 56 every 5 yrs	
				60	60			
			68-69(H)	68(H)	68			
			63(I),69-70(H),73(I)		63		53,63,73	

Note: Number refers to year; (H) denotes household coverage; (I) denotes individual coverage.

	Jain Compilation, 1975, World Bank (a)			Adelman-Morris 1973(b)	Paukert 1973(c)	ECLA-IBRD, 1975 (d)		Princeton-Brookings 1975(e)	ECIEL-Brookings 1976(f)
	National	Agricultural/ Rural	Nonagricultural/ Urban			National	Urban or Regional		Urban
Sudan			63(H)	69(H)	69				
Swaziland									
Syria									
Tanzania	67(I,H),69(H)			64(I)	64				
Thailand	62(H)	62-63(H),70(H)	62-63(H),70(H)					71-Urban	
Togo								62-63 68-69	
Tunisia	61(I),70(I)	61(I)	61(I)	71(I)	71				
Upper Volta									
Uruguay	67(I,H)						67(I,H),State of Montevideo 68(I,H), City of Montevideo		
Yemen, A.R.									
Zaire									
Zambia	59(H)			59(H)	59				

Key: Number refers to year; (H) Denotes household coverage; (I) denotes individual coverage.

income distribution must be made. No A.I.D.-recipient country publishes the kind of income distribution data adjusted for inflation which we need to apply absolute poverty measures without further adjustments.

As Table 10 makes clear, for only a handful of A.I.D.-recipient countries can we look back and reconstruct figures on income distribution and poverty for more than two years. I am unaware of any compilation of ongoing surveys and censuses to know whether more data are promised for certain of these countries on a regular basis in the future, but it appears that in relatively few countries are there such plans. Consequently, the possibility of monitoring the progress made by countries toward alleviating poverty (in the same way that we can monitor annual GNP growth rates, for instance) looks bleak indeed.

We should avoid excessive pessimism, however. If we are interested in a selective look at the progress of some of these countries, the data given in the compilations may provide us with some observations and intensive analysis of the information sources described in the Appendices may help in other instances. In Section D, I offer some suggestions for expanding the data base.

D. Closing the Gap Between Data Needs and Data Availability

I would recommend four specific steps to make more data on changes in income distribution and poverty alleviation available. These are:

(1) Use the Jain data for income distribution and absolute poverty calculations, both at a point in time and over time in those countries for which the intertemporal data are reasonably comparable. Comparability is assured only by in-depth analysis of the underlying data sources on a case-by-case basis. Once this is done, inflation factors must be obtained

and carefully verified. Finally, the data for one year must be fitted by interpolation to the inflation-adjusted income brackets of the other year.

(2) From the microeconomic data in the original questionnaires or computer tapes, follow the same steps as in (1), avoiding interpolation. This might be done in the individual countries themselves. Failing that, a foreign assistance body like A.I.D. is in a far better position than individual research organizations to secure the original data and perform new computations and tabulations. That advantage might well be exploited for the information of policy-makers and academicians alike.

(3) Assist in the design and financing of new censuses and surveys and encourage ongoing ones to provide data which are comparable with respect to definition, scope, and coverage. From my own limited experience in a small number of less developed countries, the interest in obtaining such information is there, but the resources are lacking.

In those countries with domestic expertise and a keen interest (e.g., Colombia), financial help from A.I.D. would immediately be put to productive use. In other countries at a less advanced stage, outside experts might well be able to participate in the design and conduct of the census or survey to the advantage of all.

(4) As the results of income distribution and absolute poverty studies become available, A.I.D. might process these figures and issue the results in periodic reports. These reports could be circulated as occasional bulletins and collated annually, the coverage varying from one time to the next depending on which specific countries had new information available. In addition, it would be most helpful to integrate the new data with the old in the form of annual compilations.

E. Conclusion

This section has described the data required for absolute poverty studies of less developed countries. The existing data have been reviewed and found to be deficient in a number of respects, most importantly scope and comparability. Accordingly, I have recommended several ways of improving the data base so as to facilitate more widespread and up-to-date reporting of countries' progress toward the alleviation of poverty.

One important conclusion from this review of the available data and their limitations is that we should recognize the impossibility of regularly monitoring all 69 A.I.D.-recipient countries. Very simply, the data do not permit it, nor will they. We now have nationwide income distribution data for only 32 of these countries, and on changes in income distribution for only 16. It will be many years before information on changes in income distribution and poverty become available for even the majority of these countries. Over the next several years, as new studies are done on one country at a time, information will trickle in on the progress of these countries in improving the economic position of their poor and on the determinants of that progress (or lack thereof). In the interim, some other basis will have to be used to decide where aid is to be allocated.

VI. CONCLUSIONS

This paper has been written in response to a mandate from the Congress to consider greater equality of income distribution as a goal of economic development. The very term "greater equality of income distribution" is not well-defined, either in the Congressional legislation or in the economics literature. I have chosen to think of it as "demonstrable improvements in economic position of the poor," reflecting my perception of the concerns of the development community.

At the outset of this paper, we posed five questions on how to assess progress made by less developed countries toward this end. The answers will now be summarized.

A. Summary: On Assessing Progress Toward the Alleviation of Poverty

1. Income distribution is a useful concept. The usual figures on income in the current month or year, although not ideal, provide a reasonable approximation to economic well-being. Most observers regard the family as the appropriate recipient unit. Of the various income concepts available, it is generally agreed that income should be measured after taxes rather than before and should be adjusted to reflect home-produced consumption, government-provided goods and services, and differences in prices within a country. For whichever income concept one uses, demographic differences among families must be taken into account. Adjustment of incomes to a per capita basis is favored by many. But due to economies of scale, a preferred measure might be the distribution of family income within specific family size groups.

2. Relative inequality studies suggest a number of stylized facts. In a cross section of countries, we generally find an inverted-U relationship between relative income inequality and income level, as hypothesized by Professor Kuznets. However, countries' income levels explain only a small part of the variability in measured inequality; other characteristics of the economy are also important. The overall extent of inequality is associated with a number of development factors such as growth of the modern sector, declining importance of agriculture, and increased educational investments.

Despite what is known, there is much that is not known. In some countries, one relative inequality measure indicates an increase in inequality over time, while another indicates a decline over the same period. We discern no systematic relationship between the rate of economic growth and changing relative inequality. Too little research has been done to know whether the patterns of change in relative inequality are linked to certain economic development strategies, such as export promotion versus import substitution, stimulation of agricultural productivity as opposed to industrialization, or extensive versus limited government fiscal involvement.

3. Changes in income distribution in the course of economic development may be studied in a number of different ways, with qualitatively different results. Three types of approaches were distinguished:

(i) Relative Inequality Approach, which uses Lorenz curves, Gini coefficients, and other traditional kinds of measures;

(ii) Absolute Poverty Approach, which looks at the number below an absolute poverty line and the amount of their income shortfall, and

(iii) Relative Poverty Approach, which provides information on the absolute income received by the poorest 40%.

The choice among these three criteria for assessing the distributional consequences of economic growth raises difficult and quite basic welfare economic issues. It may be inferred from the literature that most students of economic development care mainly about reductions in absolute poverty. However, most empirical studies employ relative inequality measures. Not only is this discrepancy between concept and measure illogical but it may also lead to important oversights concerning poverty reduction.

In two actual case studies, absolute poverty measures are found to give qualitatively different results from the conventional relative inequality measures. In Brazil, absolute poverty was alleviated even when relative inequality rose. In India, absolute poverty worsened although this was not reflected in measures of relative inequality. These absolute poverty measures are more appropriate indicators of progress toward improving the economic position of the poor than are the usual relative inequality measures ordinarily computed.

4. Reliable and timely data for measuring changes in absolute poverty are not regularly available.

To implement the absolute poverty criterion, we need to define a constant absolute poverty line, adjust the published income distribution figures for inflation, and calculate values of the various poverty indicators. These data must be available with comparable coverage and definitions at two or more points in time.

Looking at existing income distribution statistics, only 16 of the 69 A.I.D.-recipient countries possess nationwide income distribution data for at least two points in time, but there is no assurance that these data are reliable and consistent. In these countries, there are no regularly-published absolute poverty

data. The inavailability of such data results more from a lack of appreciation of the importance of this type of measure rather than any inherent difficulty in producing it. In these instances, old data files can be reprocessed and new data files processed for the first time in such a way as to permit absolute poverty comparisons. In making these comparisons, care should be taken to assure comparability of the statistics; this has not been done in any of the compilations.

Looking ahead, nationwide income distribution data are available for 16 other recipient countries at a single point in time. In many of these, the data are presumably of sufficient quality to serve as the base year were a second census or survey done in the future. For the other 37 A.I.D.-recipient countries, though, it will be a very long time before data to assess progress toward the alleviation of poverty will be available at all, let alone on a regular and timely basis.

5. To close the gap between data needs and data availability, A.I.D. might follow these steps:

A. Use the data compiled by Jain to make absolute poverty calculations wherever possible and to make comparisons over time in those countries with reasonably comparable surveys or censuses.

B. Where possible, use the original questionnaires or computer tapes for this same purpose.

C. Assist in additional data gathering where material or technical assistance would be well-received.

D. Publish new data as they become available as occasional bulletins and periodic reports.

B. On Assessing Commitment Toward the Alleviation of Poverty

Everything in this paper has been directed toward assessing the progress of poor countries toward bettering the economic condition of their poor. What these measures can tell us is how rapidly poverty is being alleviated. This is something we very much want to know about and have very little information on at the present time.

To my mind, there is a very real danger in using any measurement of the sort considered here as an indicator of a country's commitment to alleviating poverty. What these measures can not tell us is what was possible, and therefore how well the country did relative to what it could have done, given its resource endowment and a whole host of other factors which influence the course of economic development. Countries that show very little progress in alleviating poverty may find themselves in this sorry state more because they have so very far to go and so very little to do it with than because they have not tried. Unfortunately, the state of the art is not far enough advanced to provide guidance on how to take these considerations into account in deriving an adequate measure of progress relative to potential. This point is broader than just for income distribution; it pertains also to improvements in agricultural productivity and nutrition and reductions in unemployment and infant mortality as criteria for assessing a given country's commitment to improving the economic position of its poor.

In gauging commitment toward the poor as a criterion for receipt of aid, simple screening processes would help avoid those countries in which the aid funds are clearly being funneled into the hands of the rich or of corrupt government officials. Beyond that, in choosing which countries merit assistance, Congress might do very well by continuing the present practice of identifying where the large groups of poor are and channeling resources accordingly. For this purpose, data like those in Tables 8-10 despite their limitations are invaluable

APPENDIX I

MAJOR SOURCES OF DATA ON INCOME DISTRIBUTION IN LESS DEVELOPED COUNTRIES

This appendix briefly describes the six major compilations of data on income distribution in less developed countries presented in Table 10.

World Bank Data

The most extensive, recent, and best-known compilation of data on size distribution of income in LDCs is that of Jain (1975) at the World Bank. Bibliographic references supporting this data may be found in a separate World Bank volume prepared by Kipnis (1975).

The Jain data cover 81 countries ranging over the entire spectrum from very rich to very poor.[1] For each available data set, distinctions are drawn between individual and household data and agricultural/rural versus nonagricultural/urban data. However, no attempt is made to assure that these terms have the same meanings across countries or within a given country at various points in time.

Potential users of the Jain data should realize that the information presented is in no way quality-rated. Compiled data are no better than the underlying data from which they are drawn. Appendix II presents more detailed examinations of the data in 14 less developed countries, selected as potentially most fruitful. The quality varies considerably, but few of the countries examined offer income distribution data which are thorough in coverage, accurate in execution, and consistent across surveys or censuses. These limitations of the Jain data are concealed by the uniformity and attractiveness of the 122 pages of beautifully-matched tables found in the volume. The difficulties should not be overlooked. Let us heed the

[1] In addition to the A.I.D.-recipient countries listed in Table 10, the Jain compilation also includes data for Argentina, Australia, Bahamas, Barbados, Bulgaria, Burma, Canada, Cyprus, Czechoslovakia, Dahomey, Denmark, Fiji, Finland, France, Democratic Republic of Germany, Greece, Hong Kong, Hungary, Iran, Iraq, Israel, Japan, Lebanon, Libya, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Puerto Rico, Rhodesia, South Africa, South Vietnam, Spain, Surinam, Sweden, Taiwan, Turkey, Uganda, United Kingdom, United States, Venezuela, Yugoslavia.

warning expressed by the Director of the World Bank Development Research Center on p. vii of Jain's report: "The imperfections of income distribution data...apply in full measure to the present collection. There are in no sense any special qualities deriving from the fact that they are published by the World Bank."

Adelman-Morris Size Distribution Data

Until the appearance of the World Bank compilations, the major data-gathering exercise had been that performed by Adelman and Morris (1973). Their Table 1 presents size distribution of income data for 43 less developed countries. The sources for their data are given in the accompanying notes.

As Table 10 indicates, they have only one observation on income distribution for each country in the sample. Hence, for purposes of assessing progress toward the alleviation of poverty, they must make the controversial assumption that cross-sectional patterns mirror what happens over time within countries. If we do not accept this assumption, as I do not, their conclusions on changing income distribution during economic development are suspect.

Suppose we put the Adelman-Morris data to the more limited use of detailing the size distribution of income in a large number of countries at roughly the same point in time. I have reservations about the suitability of their data for this use for the following reasons (in order of importance):

(a) The authors have freely mixed population and household figures together. Professors Kuznets, Fishlow and others have emphasized that the household is the most potent redistributive device there is in LDCs.[1] For any given country, the size distribution of income among persons would be expected to be much less equal than the size distribution of income among households. Therefore, by merging the two sets of estimates together, Adelman and Morris have introduced much noise into the data and the possibility

[1] See Kuznets (1976) and Fishlow's (forthcoming) formal discussion of it.

of encountering spurious patterns.

(b) The size distribution figures for a number of countries make use of extraneous information which is related only tenuously to size distribution. In Burma, for example, the authors use National Accounts Data to estimate rural incomes. Another example is Greece. There, they adjusted the income share of the top 5% by UN national accounts data on property incomes and ILO labor estimates by skill. In these countries, the figures necessarily reflect preconceptions about the size distribution of the income adjustments; the basis for these preconceptions does not appear.

(c) In a large number of countries, the income shares of specific fractile groups are estimated by curve-fitting. I would suspect that the variations in these curves across countries are instrumental in determining the variations in size distribution. For these countries, the data are simply too gross.

(d) The precision of their figures is literally incredible. Can we really believe that income share of the poorest 40% is 15.85% in Zambia or 22.26% in Surinam?

For all these reasons, the Adelman-Morris data cannot be used to gauge countries' progress toward alleviating poverty.

Paukert's Income Distribution Data

The income distribution data compiled by Paukert (1973) are modifications and amplifications of the Adelman-Morris figures. Paukert reestimated some of their figures using logarithmic rather than linear interpolations, discarded countries where the original data were particularly bad, and added newly-available information for other countries. Since Paukert's data are derived from those of Adelman and Morris, his figures suffer the same

difficulties.

Let us now turn to other compilations of more limited scope.

ECLA-IBRD Project on Income Distribution in Latin America

A project carried out by the Economic Commission for Latin America (ECLA) and the Development Research Center at the International Bank for Reconstruction and Development (IBRD) has produced data on income distribution for ten Latin American countries.[1] The information is derived from household surveys conducted in each of the countries around 1970. In some of the countries, coverage is nationwide, while in others, it is limited to particular regions or metropolitan areas. The data are presented in individual country reports and summarized by Altimir (1974). The main lessons and limitations of those bodies of data are discussed in Altimir (1975). On the whole, the quality seems satisfactory enough, although the limitations should not be overlooked.[2]

Besides the income distribution figures themselves, extensive cross-tabulations provide information on the correlates of income by socio-economic group, sex and age of head, size of household, etc. The figures are there-

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[1] Data are already available for Uruguay, Colombia, Panama, Chile, Venezuela, Brazil, Honduras, and Costa Rica and are forthcoming for Peru and Mexico.

[2] Altimir argues that biases due to non-representative sampling and omissions of certain types of income (in particular, self-employment income) are fairly minor as compared with underestimation of income from known sources. Apparently the extent of underestimation varies for different population groups. The most important limitation in the data is the lack of national coverage. Thus, regarding the income distribution data from household surveys and population censuses he concludes (p. 98) that "overall distributions of income resulting from those sources can hardly be considered and analyzed simply as 'the' income distribution of the country." It would seem, though, that the data are reasonably accurate for the areas surveyed. Thus, Altimir appears to have exercised a certain amount of rhetorical overkill.

fore useful in gathering impressions about the structure of income distribution, i.e., how many persons and families receive how much income and what are the characteristics of those at various points in the income distribution.

For purposes of assessing progress over time in raising absolute incomes and alleviating absolute poverty in the course of eocnomic development, the figures are inadequate. Costa Rica is the only country for which income distribution data are available for two points in time more than two years apart, and in that country, the base year reflects national coverage, the terminal year only urban areas.

In summary, the ECLA-IBRD data provide useful information of reasonable quality on the structure of income distribution in a large number of Latin American countries. However, for data on changes in income distribution, we must look elsewhere.

Princeton-Brookings Data

From 1973 to 1975, a joint project on income distribution in LDCs was carried out by researchers at Princeton University and the Brookings Institution, culminating in a book edited by Frank and Webb (forthcoming). As background papers to their research, the project commissioned studies of available data in 19 less developed countries selected for potential richness. The collected information (summarized in Table 10) could be used to produce a compilation of data similar to those of Jain, Adelman and Morris, etc. But this was not done, since the purpose of the papers was to subject each country's data to critical scrutiny. The findings for 14 of these countries (all of the A.I.D.-recipient countries covered in the Princeton-Brookings papers) are summarized in Appendix II. Sadly, the country-by-

country examination shows the underlying data base to be very weak in the majority of cases.

ECIEL-Brookings Project on Urban Income and Consumption in Latin America[1]

Beginning in the late 1960's, the member institutes of the Program of Joint Studies on Latin American Economic Integration (ECIEL) have conducted sample surveys in the principal urban areas of their respective countries with the aid of the Brookings Institution. The data cover urban areas in 10 countries: Argentina, Bolivia, Colombia, Paraguay, Peru, Venezuela, Chile, Ecuador, Brazil, and Uruguay. Of these, survey results are now available in six countries (Colombia, Chile, Ecuador, Peru, Venezuela, and Paraguay).

The survey information is of two principal kinds: income and expenditures and characteristics of the household and its members. The data are enormously disaggregated; they include, for example, 509 expenditure items and 54 income items. For ease in inter-country comparisons, each country's questionnaires have been processed in a common format. Extraordinary care has been taken to clean, verify, and adjust the data so as to minimize sample biases. Accordingly, the information seems exceptionally reliable.

Because the ECIEL-Brookings data are limited to major urban areas at a single point in time, they cannot therefore be used to measure countries' progress over time in alleviating poverty. But for the purposes of microeconomic analysis of income and consumption patterns within these areas, the basic data tapes are a rich source of information.

Many studies have now been undertaken using the data from these surveys. The principal multi-country works are Brookings Institution (1974), Ferber (1975), Musgrove (1976), and Ferber and Musgrove (1976). These studies contain references to other studies performed in the individual countries.

[1]This description is based on Brookings Institution (1974).

APPENDIX II

DESCRIPTION OF INCOME DISTRIBUTION DATA IN SELECTED A.I.D.-RECIPIENT COUNTRIES

This appendix contains summaries of income distribution data for 14 A.I.D.-recipient countries: Bangladesh, Brazil, Colombia, Ghana, India, Indonesia, Kenya, Korea, Nigeria, Pakistan, Philippines, Sri Lanka, Tanzania, and Thailand. Each summary attempts to evaluate the availability of data and its suitability for making valid judgments about changes over time in income inequality and poverty.

For the most part, these summaries are distilled from material prepared under the auspices of the Princeton-Brookings Income Distribution Project financed by A.I.D. That project commissioned six experts from around the world to write papers reviewing income distribution data in less developed countries where the data were thought to be particularly rich. In all, 18 countries were surveyed. Of these, 4 (Mexico, Malaysia, Taiwan, and Venezuela) are not recipients of assistance from A.I.D. The remaining 14 are covered in what follows.

In preparing these summaries, I am able to draw on my own personal experience with the data in only a few cases. In these instances, I have added further material with which I am familiar but which was neglected by the authors of the Princeton-Brookings papers. In the majority of cases, therefore, I have had to rely on secondary sources and the judgments of others on data adequacy and reliability. The reader should interpret these reports in that spirit.

The summaries, although lengthy in toto, are quite brief individually. Accordingly, I have made extensive reference to both primary and secondary source documents so that those wishing greater detail will know where to turn.

BANGLADESH

A. Household Income and Expenditure Surveys and Labor Force Surveys

Since Bangladesh was part of Pakistan until December 1971, the sources of data for it are more or less identical with those for Pakistan. In fact all the surveys conducted so far were carried out while Bangladesh was included in Pakistan. (Efforts are now underway to get the surveys going again in Bangladesh after the disruption caused by the civil war of 1971). Thus data may be obtained from the Household Income and Expenditure Survey for East Pakistan for the years 1963-64 to 1967-68. These were published separately from those for West Pakistan but contain the same questions and categories of information and also suffer from the same limitations, in particular, non-comparability between surveys conducted before 1966-67 and those conducted thereafter.

The same holds for the Labor Force Surveys carried out as part of the Quarterly Surveys of Economic Conditions, as for the Household Income and Expenditure Surveys. For further description, refer to the summary of data sources in Pakistan.

B. Other Sources

1) The Rajshahi University Survey of Employment, Income and Expenditure of Rural Households in East Pakistan in 1965-66: This survey was based on a small sample of 239 households from five different rural areas, selected on the basis of important crops. Weekly information was collected on income, consumption and employment but the results do not seem to have been published yet.

2) A study conducted by the Bureau of Economic Research, Dacca University in 1956-57 on consumption patterns in both the rural and urban areas of East Pakistan has been published; see Islam (1965).

3) The Nutrition Survey of East Pakistan 1962-64: this covered 22 clusters of 1000 persons each, and collected data on food consumption. The report on the survey provides figures for each location of the percent of households with nutrient intakes below the minimum necessary, by type of nutrient. Some anthropometric data are also reported. See: U.S. Dept. of Health, Education and Welfare (1966).

4) Data on the distribution of agricultural land and other assets are available from the Agricultural Census of 1960 and for 1963-64, 64-65 and 67-68 from sample surveys conducted as part of a series entitled the Master Survey of Agriculture.

C. Research Studies

In addition to the censuses and surveys mentioned above, other important studies of income distribution in Bangladesh include those of Bergan (1967) and Alamgir (1974, 1975).

D. Summary

Bangladesh offers reasonably high-quality data on income distribution in the later 1960's. These data are national in coverage. No comparable data are available for earlier or later years. For further information, see Rajaraman (1975).

BRAZIL

Brazilian data are reported in depth in Langoni (1975). His paper differs from the others in the Princeton-Brookings series in that he also goes into detail on the causes for changing income distribution.

A. Major Data Sets

Demographic Censuses, 1960 and 1970

The demographic censuses for 1960 and 1970 contain information on income, including wages and salaries, distributed profits, interest, and rents. Additional information was collected on family composition by age and sex, educational attainments of family members, employment status, migration status, etc. The censuses are comparable in design and coverage, and so afford the opportunity for analysis of changing income distribution over the decade.

Among the limitations of the census data mentioned by Langoni (1975, pp. 6-7) are: (i) exclusion of implicit incomes; (ii) difficulty of measuring non-contractual incomes correctly; (iii) inability to account for regional cost-of-living differences; (iv) problems in the treatment of taxes and public services; and (v) inability to distinguish voluntary from involuntary reasons for working less than full time. All in all, these are minor problems compared to the limitations of the income distribution data in other LDCs. An undisputed fact is that relative inequality increased between 1960 and 1970. Langoni (1972), Fishlow (1973), and others have engaged in a heated debate over the causes for this change, with particular reference to the role of government policy. Note that the Langoni-Fishlow debate is over changes in relative inequality. In my research (Fields (1977)), I have presented data from the two censuses showing a reduction in absolute poverty. For more on this, see Section IV.B in the text.

Quarterly Household Surveys (PNAD) by the Brazilian Institute of Geography and Statistics (IBGE)

These surveys are conducted on a variety of subjects. Some deal specifically with expenditure and income. Langoni reports (p. 28) that the results of an income distribution survey are being prepared for publication. Subsequent to Langoni's review paper, a research study analyzing changes in income distribution between 1968 and 1973 using PNAD data was written by Morley (1976).

Urban Workers Income Survey (Two-Thirds Law Data), 1968-present

Beginning in 1968, the Informatica do Ministerio do Trabalho has published yearly data on the salaries of registered workers in the industrial and service sectors of the economy. The earnings information is particularly reliable, since it is extracted directly from payroll accounts. The population covered by the Two-Thirds Law is the same as that covered by minimum wage legislation; agricultural workers and the self-employed are the main groups excluded. The available information includes hourly wage, hours of work, age, sex, educational level, and region of residence.

Income Distribution Data, Ministry of Finance (CIEF), 1969-present

Since 1969, the Ministry of Finance has collected data from national surveys of income for tax purposes. This survey separates labor income from capital income. However, low-income people are not required to pay income taxes, and so are not covered by this data.

B. Evaluation and Summary

The census information provides comparable data on a national basis for 1960 and 1970. The information is of high quality. It has been

analyzed in a number of studies.

The non-census data on Brazil include a series of national surveys on income for tax purposes and a series of urban surveys of industrial and service sector workers, both conducted annually. The former excludes low-income workers, while the latter excludes farm workers and the self-employed. Still, they are useful in authenticating estimates obtained from other sources.

COLOMBIA

For research on changing income distribution in Colombia, data are available from four microeconomic surveys conducted since 1967 and a Census Public Use Sample as well as more aggregative sources. For further details of these recent microeconomic data sets, see my paper with Helena de Jaramillo (1975), in which we describe data from surveys conducted by CEDE (Centro de Estudios sobre Desarrollo Económico, Universidad de Los Andes, Bogotá) and DANE (Departamento Administrativo Nacional de Estadistica), the National Statistical Office. More speculative information for earlier years is presented in the works of Berry (1974) and Berry and Urrutia (1976). Data for 1970, unfortunately containing a number of apparent inconsistencies, are found in the work of Cordova (1973).

A. Major Microeconomic Data Sources

Investigation of Urban Family Incomes and Expenditures (PRESFAM), CEDE, 1967-8

In late 1967 and early 1968, CEDE conducted a family budget study in the four major urban areas of Colombia (Bogotá, Barranquilla, Cali, and Medellín), covering some 3,000 families. Three types of information were gathered: details of family spending; a detailed breakdown of income according to source; and socio-economic characteristics.

Urban Employment-Unemployment Survey, CEDE, 1967

On many occasions during the 1960s, household surveys were conducted in the major urban areas of Colombia. Their primary aim was the collection of data on labor force participation and unemployment, but incomes from labor and non-labor sources were included as well. The 1967 data are particularly comprehensive, covering eight cities (Bogotá, Barranquilla, Medillín, Ibagué, Manizales, Bucaramanga, Popayán, and Cali), and including more than 10,000 individuals.

Urban Employment-Unemployment Survey, DANE, 1974

At various times during the 1970s, DANE conducted employment-unemployment surveys and family budget studies similar to those done earlier by CEDE. One of the most recent, the employment-unemployment survey of June, 1974, was based on the same stratified random sampling procedure as that used by CEDE in 1967 in the four major cities (Bogotá, Barranquilla, Cali, and Medellín), and the results are therefore directly comparable. 5,000 families are included. This body of data, along with the CEDE Employment-Unemployment Survey of 1967, permits comparison of urban income distributions at the beginning and end of a sustained economic upturn.

Rural Household Survey, 1972

In 1972, DANE, in conjunction with the Ministry of Agriculture, carried out two rural surveys. Both gathered data on rural incomes. One survey took farms as the basic unit, and collected data on incomes, expenditures, and utilization of labor and other inputs for roughly 5,000 farms. The other, which was based on households, collected information on income and employment (among other things) for nearly 2,000 family units. Data tapes for both surveys are nearly ready. There is not, however, comparable data on rural income distribution for another point in time.

Census of Population and Housing, 1973

The 1973 Census gathered information from each member of the population on their incomes and the following other characteristics: labor force status, occupation, economic sector, migration status, sex, age, marital status, education, and nationality.[1] A 4% sample of the individual records is available to authorized users from DANE for social scientific research into the correlates of income. This is the first census for which a public use sample is available.

[1]The 1973 Census was the first to collect income data.

B. Summary

Colombia offers high-quality data for exploring the structure of income distribution in both urban and rural areas. Only for the principal cities are there precise data on changes in income distribution over time (between 1967 and 1974). For rural areas, sufficiently detailed figures on incomes and poverty may be calculated, but just for one year (1972). Good information is available for the country as a whole on incomes and poverty, but only for 1973. Therefore, it is not now possible to make nationwide comparisons of the size distribution of income or absolute poverty indicators at two or more different points in time. This deficiency will be remedied at the time of the next Census or Rural Household Survey, whichever comes first.

GHANA

Data on changing income distribution in Ghana are limited. Both government and private surveys have been conducted. What information there is is summarized in Phillips (1975), from which this outline is taken.

A. Government Surveys

Income Tax Data--Urban Workers (Labour Statistics); 1956-1970

In compliance with the Statistics Law employers file annual and quarterly returns on wages and salaries paid to their recorded workers. These are published in the Labour Statistics and include information on number of workers by industry, total salary disbursements (including over-time, back pay, bonuses and commissions), distribution of African workers by wage rate, and monthly earnings indices. However, coverage is not complete. Exempted from filing are employers with less than ten employees. Excluded are cocoa workers, African diamond diggers, domestic employees and the self-employed. In addition, only civilian workers are covered. The unit of investigation is the individual wage earner, not the household.

Urban Household Budget Surveys (HBS);1953, 1955, 1956

Beginning in 1953, Ghana's Central Bureau of Statistics began collecting data on consumption patterns in three important urban areas to establish cost of living indices. Households of 2-8 people were the units of investigation in Accra (1953), Sekandi-Takandi (1955), and Kumasi (1956). The survey covered income and expenditure over a 30 day period. Survey households had to meet very specific requirements for inclusion and this probably adversely affected the accuracy of the survey. The intended 25% coverage for each of the three cities was not achieved. Finally, criteria for inclusion differed between the three cities.

National Household Budget Survey (NHBS); 1961/62

Eighteen households from each of 200 enumeration areas were selected to participate in an income and expenditure study. The household coverage is incomplete--1/3 of the selected rural households were eliminated because of inaccessibility. The survey covers a single reference period.

Income Tax Data 1963 to present

Since 1963 the Annual Reports of the Central Revenue Department have tabulated income distribution of the self-employed. Because of tax evasion and avoidance, however, coverage is not felt to be complete and accuracy is questionable.

B. Private Surveys

Eastern Region Household Budget Survey (ISSER) 1967, 1968

D. K. Dutta-Roy, of the Institute of Statistical , Social and Economic Research (ISSER) of the University of Ghana, investigated income and expenditure distribution in the Eastern Region of Ghana in 1967-68; see Dutta-Roy (1969).

The study covered a stratified sample of 364 rural and 358 households in urban centres in 1967 and 1968. Each household was interviewed six times during each quarter of the year. The information gathered included the source of the household's income, distributions of income and expenditures, and demographic characteristics.

Although this survey covers only one region, it is thought to be the most reliable information on urban/rural income distribution available for Ghana.

Rural Worker Income Survey, 1970.

In 1970 B.E.Rourke and others conducted a survey in 170 agricultural districts; see Rourke (1971). Distinguishing between "casual" and "annual" labor they proceeded to compare wages, self-employment incomes, and employment patterns for different types of workers.

Rural Income Survey of Cocoa Farmers 1963/64

Information is available on the distribution of the 1963/64 cocoa crop based on the purchasing records of the United Ghana Farmers Cooperative Council's 40,000 farmers.

Eastern Region Cocoa Farmer Survey

Dutta-Roy's Eastern Region survey was supplemented by a study by C. G. Battarcharya and P. N. Potakey. The additional data supplied by cocoa farmers included information on gross returns, production costs, acreage under cultivation, and ratio of non-bearing trees to bearing trees.

C. Studies Derived from these Surveys

Employment and Income Survey--1956-1968

Using data from Labour Statistics income tax data from the self employed and data on cocoa farmer income, Ewusi (1971) analysed employment and income broken down by industry and region.

Using the most common relative inequality measures he demonstrated a worsening of income distribution over the 1956-1968 period. Since his sources have incomplete coverage and they are not comparable over time his findings are hardly definitive.

Income Differential Study

This study by Greenhalgh (1972) is based on Dutta-Roy's survey in Eastern Ghana. Its purpose was to explain income differences by reference to locality (urban/rural), occupation, educational level of household members and amount of capital. He reports that increased education in urban workers accounts for the differences between rural and urban income.

Rural Income Survey and Education

J. B. Knight (1972) used Dutta-Roy's survey data in conjunction with government published data (primarily the 1961/62 NHBS) to analyse the effects of education on income. He found that workers of the same educational level earned more in urban than rural areas.

D. Evaluation

When all is said and done, Ghana lacks time series information with consistent national coverage. The most reliable data are limited geographically and/or in representativeness and pertain to a single year. There is a national survey, but it has serious sampling problems. Labour Statistics data and income tax data might be combined, but this would exclude the majority of the population which falls outside the scope of the modern sector and the tax laws. Thus, at present, we have no reliable estimates of either the nationwide structure of income distribution at a point in time or of changes in income distribution over time.

INDIA

A. Major Data Sets

National Sample Surveys (NSS)

The National Sample Survey (NSS) collects consumption data and other household information in regular annual surveys. The sample size is about 25,000. Thus nationwide and statewide time series on household consumption in India are available for the years 1950 to 1973-74. Income data were collected irregularly, between the 10th (1955-56) and the 14th (1958-59) rounds and again between the 19th (1964-65) and 25th (1970-71) rounds. Starting with the 8th round (1954-55)matching sample surveys have been conducted by several Indian states that allow us to draw upon a larger pooled sample for our research. Regional breakdowns for both rural and urban sectors are possible on a fairly reliable basis from the 13th round onwards (1957-58). Occupational breakdowns are also possible in the Indian case, and data on employment are available for many rounds. Data on sex, age and education are also collected in each survey although it is not clear if they are available in primary form or usefully presented in tabulated form.

Surveys Conducted by the National Council of Applied Economic Research (NCAER)

These surveys are conducted nationally on an annual basis. They are the principal sources of data on income distribution, and also provide information on consumption and savings. It is possible to break the data down into rural and urban income distributions. The sample size is 3,000 plus. This is too small to permit state level estimates. Bardhan (1974, pp. 106-7) observes: "Except for the NCAER estimates, all other estimates of income distribution in India depend on patching together partial data

from different sources."

B. Other Data Sets

Farm Management Studies

Since 1954-55, farm management surveys collecting detailed information on farm operations such as incomes, and expenditures by activity have been carried out in different areas of India. Each survey covers one district in a state and the sample size has normally been 10 to 15 randomly selected villages. The survey period for each study is three years. The quality of the data thus collected is very good although the limitations of sample size and specificity make them useful only as supplementary sources of information on income distribution.

Surveys of Agriculturally Progressive Areas

Intensive surveys, somewhat akin to the farm management studies but of wider geographical coverage, have been conducted in the agriculturally progressive areas of India. Data have been collected on incomes, savings, investment and consumption over a period of two years (1969-70 to 1971-72) for fifteen different areas. Each of these areas represented a different district and the sample size in each area consisted of ten villages with fourteen households per village. Again the primary use of these studies for our purposes would be to supplement the nation and state-wide data on income distribution provided by the NSS and NCAER.

Agricultural and Rural Labor Surveys

Two agricultural labor surveys have been conducted, one by the Labor Bureau in 1950-51, and the other by the National Sample Survey in 1956 (part of 4th and 12th rounds). These surveys collected data on wages and employment and consumption and income. Data are available at state level.

Other Wage Data

A rural labor survey was conducted by the NSS as part of the 18th round (1963-64). The income data collected in this survey should be very reliable because an itemized list of income sources and levels, including inputed income sources, was used. The data are not presented at the state level, only at the national level.

Wages and salaries of employees of all government enterprises are available from the Central Statistical Organisation.

For the registered manufacturing sector, wage data by state are available from the Annual Survey of Industries which covers establishments employing 50 or more workers.

For the small-scale manufacturing sector, wage data are available, though not a state-wide basis, from NSS reports for rounds 7-10, 14 and 23.

Wage data for agricultural laborers are available from the Agricultural Labor Surveys mentioned previously. Some NSS reports have reliable and useful wage data but these are not reported systematically. A special rural survey conducted by NSS in 1970-71 is a particularly good source (25th round). It provides state-level data.

Data on Distribution of Land

The 8th (1954-55), 16th (1960-61), 17th (1961-62)and 26th (1971-72) rounds of the NSS report data on the distribution of land (at the state level for 16th and 17th rounds).

C. Studies Based on These Data

So many studies have been conducted using the above-surveyed data that it would be pointless to list them here. The interested reader is referred to the Srinivasan-Bardhan (1974) volume, particularly the article by Bardhan (1974), for references to the literature.

D. Summary

Among less developed countries, when consumption surveys are also taken into account, Indian income distribution data are unsurpassed. Although there is no census information, comparable nation-wide surveys date back to the 1950's. Supplementary surveys afford the opportunity for consistency checks and additional refinements and adjustments. Besides the nationwide data, state-by-state information is also available. Thus, the prospects for research on income distribution in India seem quite good.

INDONESIA

The availability of data on income distribution in Indonesia is reported in Meesook (1975).

A. Major Data Sources

National Sample Surveys

These are the principal sources of information. Four surveys have been conducted: in 1963-64, 1964-65, 1967, and 1969-70. Subject and geographical coverage differ from one time to the next. In particular, only the 1964-65 and 1967 surveys gathered data on consumer expenditure, but the former included all of Indonesia (excluding the provinces of Maluku and West Irian) while the latter was limited to Jawa-Madura. Thus, comparisons over time cannot be undertaken. However, these data appear to be useful for estimating the distribution of consumption (but not income) at a point in time and for relating these to certain household characteristics (type of employment, household size).

Family Expenditure Survey

These surveys were conduced in eleven cities in 1968-69 and 1970. Detailed consumption breakdowns are available.

Integrated Agricultural Survey and Socio-Economic Survey

This is ongoing work begun in 1969. For late 1969 and early 1970, the survey gathered data on income and expenditure, labor force activity, demographic characteristics, crop-cutting of major food products, etc. Surveys after 1970 dropped the demographic, labor force, and income and expenditure data.

B. Summary

Says Meesook (1975, p. 47): "In conclusion, there are no studies at the present time which deal directly with income distribution in Indonesia. A few studies deal with consumption expenditures, but not income." National, urban, and rural consumption data are available for the late 1960's, thus affording a snapshot view. However, changing distributions of consumption (or income) over time cannot be studied with existing data.

KENYA

A. Data Sets

Very few data sets on income distribution exist for Kenya. Some of the available information is summarized in Phillips (1975).

Employment and Earnings Surveys, 1963-1971

These surveys were conducted by the Central Bureau of Statistics and contain data on employee earnings by industry, occupation, race, region and sector (public/private). Income includes not only wages, but also overtime earnings, bonuses, and living allowances in cash or kind. These surveys are limited to the modern or urban sector and large scale enterprise in the rural sector. Hence, they cover only a small percentage of the economically active population. Aside from the sampling problems, there is another methodological difficulty: yearly data are based on reports from employers on one months payments and one-twelfth of the total of other payments during the year, which are found to underestimate actual yearly totals.

Income Tax Data

Data available from the annual reports of the East African Income Tax Department includes the total income of wage earners, income of self employed persons, and company income. The distribution of income between these three groups is also included. However, coverage is incomplete since the number who pay income taxes is very low. Those who do pay taxes are overwhelmingly from the highest income groups. Therefore, these data cannot be used to estimate an overall income distribution.

Urban Household Budget Surveys, 1957/58, 1963, 1968, 1969

These surveys conducted by the Ministry of Finance and Economic Planning focus on African households.[1] Since 1957/58 they have increased in scope

[1] "African" is a racial term denoting blacks, as opposed to "Europeans" (whites) and "Asians" (browns).

until by 1968/69 they included 1,146 households in three cities. All income ranges were included. Data included income in kind, housing subsidies, transfers, sale of own produce, net business profit as well as regular or casual employment income. Among the problems with these surveys are the exclusion of shanty-town dwellers and lack of information on household size or other family characteristics.

Rural Surveys 1963-present

A number of rural studies have been conducted since 1963. (1) The Ministry of Finance and Planning (1963/64) gathered information on the income distribution of farmers in the Central Province. (2) From 1963-present surveys of large and small farms were included in Farm Economic Surveys. These contain information on size of farm, gross output, profit, and land utilization. (3) In 1967 and 1968, a Survey of Non-Agricultural Enterprises in Rural Areas by the Ministry of Finance and Planning gathered information on employment and self-employment income. Methodologies and data were not discussed and cannot be assessed for the rural surveys.

Employment, Income and Equality Study, 1968-70, ILO(1972)

This report is based primarily on government statistics and is felt to be the most comprehensive report on income distribution for Kenya. It gives data on the size distribution of farms and small holdings. It also contains information on regional differences and highlights the rural/urban differential. This study, however, is limited by the data it utilizes (i.e., lack of a representatively-drawn national survey) and pertains only to a specific time period (1969-70).

B. Other Kenyan Data

An important body of data in Kenya not covered by the Phillips summary is a survey conducted in 1971 by the Institute for Development Studies, University of Nairobi under the auspices of the Nairobi City Council. This was a survey of some 1,000 African (i.e., black) households. Although the survey was primarily concerned with specific urban problems (housing, shopping patterns, etc.), basic socio-economic data were also gathered.

The survey was conducted in low and middle income areas of Nairobi. For purposes of constructing an accurate picture of income distribution, the limitation to low and middle income areas creates an obvious distortion. It may not be too severe, however, since most residents of high income areas of Nairobi at that time were Europeans (whites) or Asians (browns). Figures on the distribution of income and the determinants of earnings are reported in a paper by Johnson (1971).

C. Summary

Kenya offers a high-quality urban sample for Nairobi for one year (1971), but it is somewhat unrepresentative at the upper end. Farm economic surveys give a general view of large vs. small holdings. Other data sources are less complete and representative. Thus, no reliable income distribution figures are available for the entire country for even one point in time, let alone over time.

KOREA

A. Major Data Sets

There are a number of data sets which can be utilized in a study of income distribution for Korea. These data are summarized in Choo (1975).

Urban Family Income and Expenditure (BOS), 1963 - present

Since 1963 the Bureau of Statistics of the Economic Planning Board has annually published a report on urban family income and expenditures. The report includes data on 1,579 households randomly selected from a stratified sample in 32 urban areas. Data covers income classes, family size, occupational class and age of household head.

Rural Household Survey, 1962 - present

Each year since 1962 the Ministry of Agriculture and Fisheries has surveyed incomes of a stratified random sample of 1,180 farm households (approximately 0.5% of all farm households) cultivating an area of one danbo or more.[1] The data also includes information on family size, educational level of family members and employment status of family members.

Income Distribution Study, EPB-USOM Project, 1966

The Institute of Social Sciences of Chung-ang University conducted a single income survey from January to March 1966. The data consists of monthly income averages for a small sample, 799 urban and 971 rural households. An attempt to break the households into smaller groupings, i.e., occupation classes is not successful because of methodological and survey problems.

Report on National Wealth Survey, Economic Planning Board, 1968

This government survey gathered information on a regional breakdown of household wealth for South Korea in 1968. It does not, however, provide

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[1] One danbo = .099 hectare.

a breakdown of individual household assets. This information is available, however, on the computer tapes and could be recovered.

Distribution of Income, 1964 and 1970

Irma Adelman of the University of Maryland conducted a short term study on Korean income distribution for 1964 and 1970 as part of the IBRD-Sussex study. The data, taken from the above surveys, supplemented by C. Morrison's report on a wage and farm household survey and "...adjusted distribution of non-agricultural self employed and property income" (p. 17). Professor Adelman and associates have been hard at work on a model of Korean income distribution based upon this data.

B. Evaluation

All of the surveys cited seem to have sampling problems connected with them. The reports which state criteria for inclusion indicate that the samples are restricted to multi-person households in the middle income ranges. By excluding unrelated individuals, households with an income of more than 2 million won[1] a year and rural households cultivating less than 1 danbo, for example, the surveys lack data from households at the top and bottom of the income scale.

C. Summary

Korea offers data on rural and urban income distribution for each year since 1963. The rural and urban surveys could be merged into nationwide income distributions with comparable coverage over some 13 years. The accuracy of some of the figures can be verified using the results of other surveys conducted only on a more limited basis.

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[1]At current exchange rates, 2 million won = approximately $3000.

While these surveys appear to be comparable over time, they share a common limitation for accurately measuring the distribution of income at any one time. At issue is the representativeness of the sampling procedure, which excludes very high and very low income households. Fortunately, these biases appear constant over the entire data series.

In summary, nationwide income distribution information is presented in Korea for 13 consecutive years. With an awareness of the survey problems of these data sets, the reports can provide useful data for income distribution comparisons over time.

NIGERIA

A number of data sets exist for an income distribution study of Nigeria. The information for this summary is derived from Phillips (1975).

A. Data Sets

Urban Consumer Surveys (UCS), 1953-present

These household budget surveys,begun in 1953 by the Federal Office of Statistics, were designed to aid in assembling a cost of living index. They are not a continuous series and cover only a small segment of the economically active population. Households at poverty levels, farming households, and others in the rural sector are excluded. For the included groups, these surveys contain information on income (including wage and salary income, other wage income, rents, cash gifts, income from loans, loan repayments received, and income derived from savings accounts) and other characteristics using criteria which were consistent over time.

Incomes Profile Study, 1967

A 1967 household expenditure survey gathered data from over 1,600 households in different parts of the country (excluding civil war areas in the east). An income distribution study based on this data was conducted by Aboyade (1973). Income was found to be correlated with education, occupation, household size, household location, and sex of household head.

Rural Income Data

Some scattered surveys look at the distribution of income among cocoa farmers and other specific groups. They are limited in coverage and hence do not convey an overall view of rural income distribution in Nigeria.

Wages and Salaries Review Commission Report, 1971

Usually called the Adebo Report, this study contains information on

income in 1970 broken down by urban-rural and other comparisons.

Study of Income Distribution by Phillips and Teriba (1971)

These authors looked at income distribution from several angles: regional, urban/rural, sectoral, functional, inter-industry, inter-occupation, and inter-personal. They admit that the data are "fragmentary, came from several unrelated sources, are not too reliable and had scanty time-series dimensions." Hence, their estimates and conclusions should not be taken too seriously.

B. Summary

Nigeria offers urban consumer surveys on a regular basis, which permits a time-series analysis of urban income distribution. The coverage is consistent although unrepresentative. Rural surveys are specialized and of limited usefulness for constructing an overall income distribution profile. A one-time survey conducted nationwide may be sufficiently reliable to permit estimates of the income distribution in that one year (1967). Thus, there are not nationwide data for measuring progress toward the alleviation of poverty in Nigeria.

PAKISTAN

A. Household Income and Expenditure Surveys

Microeconomic surveys conducted annually since 1963-64 constitute the single most important and comprehensive source of data for the size distribution of income in Pakistan. These surveys are called the Quarterly Surveys of Economic Conditions. The income distribution data are published in tabulated form as the Household Income and Expenditure Surveys. The surveys for 1963-64, 64-65 and 65-66 were partial in nature and do not allow nationwide estimacion. The 1966-67 Survey was much more efficient; a new sample design prepared from the 1966-67 Survey has been used in all the Surveys since. The latest year for which data have been published is 1971-72.

The Household Income and Expenditure Surveys include information on income and expenditure groupings classified by household size, and income source (wages and salaries, self-employment, etc.). Data on sex, age and education levels are collected in each survey but are not reported in the tabulated presentation.

Some of the limitations of the data are the following:

i) The rate of underenumeration, either due to non-response or to rejection, is higher for the extremely low and extremely high income groups. This tends to understate the degree of inequality.

ii) The sample size (7,000 plus households) is small in the upper ranges.

iii) Sampling units do not take into account the increased urbanization and different rates of population growth in the rural and urban areas since the sampling frame was established in 1966-67.

B. Sample Survey of Labor Force and Its Characteristics

The second part of the Quarterly Surveys is the survey of the labor force and its characteristics. The same households are covered in this as

in the Income and Expenditure Survey. It is not clear, though, whether both sets of data are collected on the same visit. Information on hours worked, unemployment, and migration (since 1968) is collected.

C. Other Sources

1. The Census of Agriculture for 1960 and the as yet unpublished one for 1971 contain details of the ownership of land and other assets as well as information on the utilization of land, pattern of income and so on. These data should be useful complements to any income distribution study.

2. The distribution of taxable income may be estimated from income-tax returns provided by the Central Board of Revenue, Ministry of Finance, Government of Pakistan.

3. Data on industrial wages available in the Census of Manufacturing Industries (for industries employing 20 plus workers) since 1954 onwards (though not for every single year).

D. Research Studies

Among the major studies of income distribution in Pakistan are Bergan (1967), Khandker (1973), Azfar (1973), and Ayub (1976).

E. Summary

Nationwide surveys with consistent sampling procedures provide annual income distribution data for Pakistan for 1966-67 to 1971-72. The information is thought to be of good quality. For an assessment of the reliability of the data and further description of it, see Rajaraman (1975).

PHILIPPINES

A. Major Data Sets

The available data sets on income distribution in the Philippines are of two types: national income surveys and national demographic surveys. Several analyses based on those surveys have been conducted. The data and survey results are discussed further in Choo (1975).

National Income Surveys, 1956/57 to present

Every five years since 1956/57, the Bureau of Census and Statistics, Department of Commerce and Industry, has conducted a national survey of family income distribution. Included in the survey are approximately 11,600 farm and non-farm households. The published tabulations divide the families into 14 income classes. These are in turn cross-tabulated by family size, urban or rural residence, occupation of household head, educational level of household head, and region. Beginning in 1961 the percentage share of income received by each decile class is included as well.

National Demographic Survey, 1968

The University of the Philippines, Population Institute and the Bureau of Census and Statistics conducted a nationwide survey based on a stratified sample of 7,237 households. Data collected in the survey included information on income, labor, fertility and social mobility.

B. Studies of Income Distribution,

Family Income Distribution, 1966

Using the third national survey on income and expenditure by the Bureau of Census and Statistics, Parel (1969) examined factors affecting the national distribution of family income , in particular, the effects of urbanization and regional differences on family income.

Sources of Income Disparity

Data from the 1961 and 1971 national surveys on family income expenditure were analysed in a study by Mijares and Belarmino (1973) attempting to identify some of the sources for income disparity in the Philippines. The study compares the relative shares of the various income classes and presents relevant data on family size, region, location of household (urban/rural), number of workers in family and educational levels of family members. Also included is the extent of relative inequality as indicated by several of the more common indices.

Other Studies

More recent studies of the Philippines are not covered in the Choo summary. These include studies of income determination at the micro level by Encarnacion (1975), of income inequality at the macro level by Mangahas (1975), and of the effect of government taxation and expenditure patterns on the distributuion of income by Tan (1975).

C. Evaluation

In assessing the data available for the Philippines several observations should be made about particular studies. The national surveys conducted by the Bureau of Census and Statistics defines the words "urban"[1] and "income"[2] very precisely. In comparing the Philippine data to that

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[1]"Urban" is defined as an area meeting certain requirements of population density or having certain physical characteristics such as number of commercial and industrial establishments or town hall or church, public plaza, cemetery, marketplace used at least once a week, etc.

[2]"Income" includes earnings from labor, farm work; profit from sales; stocks, bonds; backpay; insurance; winnings from gambling, lottery and sweepstakes; inheritance gifts; relief or other forms of support such as pension and retirement.

from other countries, differences in these definitions should be borne in mind. The data from the 1956/57 survey has been found to be unreliable and inconsistent with information from later years; see Choo (1975, p. 24). Fortunately, the 1961 and 1965 data were found, after IBRD evaluation, to be reliable by comparison against other supplementary data. No evaluation has been reported for 1971. The National Demographic Survey, on the other hand, has been criticized for inaccuracy. Initial post-enumeration surveys contain a sizeable proportion of households with "unmatched responses." Encarnacion and others estimate under-reporting of income by approximately 12%. Most of the under-reporting seems to have been in income in kind, particularly in rural areas. Hence rural income is the most seriously understated. In the other studies summarized it should be noted that the population under study was never defined--national, rural or urban. The tax burden studies also contain methodological problems. The 1961 and 1964 survey populations are not the same and are therefore difficult to relate. The 1971 population is not discussed.

D. Summary

The Philippines offers data on nationwide income distribution for the years 1956/57, 1961, 1965 and 1971. In addition, we have government studies of the effectiveness of taxation on equalizing income distribution for 1961, 1964, and 1971. Studies derived from the national surveys attempt to assess factors influencing the size distribution of income such as regional differences, degree of urbanization, etc.

Information on nationwide income distribution is available for the Philippines for 1961, 1965, and 1971. The data have been subjected to some consistency checks and have been judged generally reliable. Particular problems may arise with rural-urban income comparisons, though. Subject to these reservations, the National Income Surveys in the Philippines seem to provide useful data for income distribution comparisons over time.

SRI LANKA (formerly Ceylon)

A. Sample Survey of Ceylon's Consumer Finances

For Sri Lanka, microeconomic data sets on household income and consumption are collected in surveys conducted by the Central Bank of Ceylon every ten years. Three such data sets exist: for 1953, 1963 and 1973. The last two are thought to be more reliable than the first one and are based on a more adequate sample design and selection. Since all sample households are surveyed simultaneously and since the surveys take place at the end of one of two major crop seasons of the Sri Lanka year (which also coincides with the end of the financial year) the reliability and usefulness of the data are enhanced. An item-wise list of consumption is also included; among other things, this permits analysis of the importance of the rice-ration (the government distributes free rice to non-income tax payers) in the budgets of various receiving groups. The obvious limitation of the Sri Lankan data sources is their periodicity. There are also some minor problems with respect to sampling design (high-income households have higher non-response rates) and concepts of income (income is attributed to an individual "income receiver," consumption to a "spending unit"). The data can be broken down by region, ethnic grouping, sex, age, and education although not usefully by occupation.

Based on the Consumer Finance Surveys, studies of changing income distribution in Sri Lanka have been conducted by Rasaputram (1972) and Karunatilake (1975).

B. Other Sources

1. The Socio-Economic Survey of Ceylon 1969-70 : This survey, apparently done only once, collected information on household consumption and income for 9700 households drawn from the entire country, as well as on demographic characteristics, employment, educational level and housing conditions. Comparison with the recurring surveys of Consumer Finances referred to before may be difficult since different definitions of the household are used.

2. There are several other specific sources of data. These tend to be of limited usefulness because of limited coverage, non-uniform definitions, sample specificity and so on. No systematic figures are available or seem to have been collected on land holdings or rural wages (or informal sector wages).

C. Summary

Changes in income distribution over time in Sri Lanka and their correlates can be estimated from the nationwide surveys of consumer finance for 1953, 1963, and 1973. These data are on the whole useful and comprehensive. For more details, refer to Rajaraman (1975).

TANZANIA

In the Princeton-Brookings series of papers, the data for Tanzania are summarized by Phillips (1975). The information presented is less informative than most, and so I have supplemented it with material from other sources.

A. Data Sets Mentioned by Phillips

Phillips simply lists a number of available surveys, giving little or no description or evaluation. They are:

(1) Surveys Conducted by the Bureau of Statistics, Government of Tanzania:

Employment and Earnings Surveys, since 1962;

Urban Household Budget Surveys of Dar es Salaam, Tanga, and Mwanza, pre-independence;

Household Budget Survey of Wage-Earners in Dar es Salaam, 1965;

Household Budget Survey of Cotton Growers in the Lake Regions, 1967;

Household Budget Survey of the Tanzania Mainland, 1969;

Village Economic Surveys, 1961-2;

Agricultural Census, 1971-2;

(2) Other Data Sources:

Income Tax Data from the East African Income Tax Department, annual;

Regional Statistical Abstract, 1968-70.

B. Studies Based on the Above-Mentioned Data

Descriptions of Tanzanian income distribution and the influence of taxes and minimum wage legislation may be found in a paper by Green (1973). Data from the Household Budget Survey are presented by Phillips (1975).

C. National Urban Mobility Employment and Income Survey of Tanzania, (NUMEIST), 1971

An important data set and body of research not covered in the summary by Phillips is the NUMEIST study. This was a household survey covering a

random sample of 1.8% of urban households in Dar es Salaam and six important regional centers. The information collected includes income, employment status, migration status, and other personal and family characteristics. The data are presented and analyzed in a number of studies by Sabot; see among others Bienefeld and Sabot (1971), Sabot (1975), and Barnum and Sabot (1976).

D. Summary

Although there are numerous specialized surveys, these data do not provide a comprehensive picture of the overall distribution of income in Tanzania. High-quality data are available for the urban sector, but for only one date (1971).

THAILAND

The available income distribution data in Thailand are described by Meesook (1975), Duncan (1976), and Chiswick (1976). The following summary synthesizes the pertinent information.

A. Major Data Sources

Household Expenditure Survey, 1958

This survey covers only Bangkok and some regional towns but not rural areas. Its usefulness is therefore limited.

Household Expenditure Survey, 1962-63

This survey collected detailed information on household expenditures for the entire country. Separate data volumes for each region were also published. Sadly, this survey has many problems including:

(i) Omission of income-in-kind; this is a serious omission since later surveys revealed that income-in-kind ranges from 9% to 69% of total income in different towns and villages; see Meesook (1975, p. 31);

(ii) "The income class means are inconsistent with the class limits" (Meesook [1975 p. 8]);

(iii) "There are far too few income classes, and these are not very well placed. For example, in Northeastern villages, 78.5% of all households are found in the lowest income class. . . It is fantastic to imagine that one can talk about the income distribution when one is in no position to differentiate among such a large proportion of all households." (Meesook, [1975, pp. 8-9]).

For these reasons, and the fact that the original data tapes have been destroyed, the 1962-63 data are not suitable for studies of income

distribution.

Socio-Economic Survey, 1968-69

This survey was national in coverage and collected information on income, expenditure and savings, socio-economic characteristics, etc. The original tabulations covered cash income only, but revised tables now include income-in-kind as well. The data are tabulated into finer categories (twelve income distribution groups rather than five as in the 1962-63 survey). In addition, the microeconomic data tapes are available, permitting analysis at the individual level of the relationship between income and age, sex, education, occupation, region, and so on. Thus, the Socio-Economic Survey of 1968-69 provides high-quality income distribution data at a disaggregated level.

Household Expenditure Survey, 1970

Little information about this survey is presented. Its marginal contribution beyond the 1968-69 survey is thought to be minimal.

Socio-Economic Survey, 1971-73

This survey parallels the 1968-69 survey in concept and coverage. The data from Bangkok and Thonburi are presented and analyzed by Chiswick (1976). Duncan (1976, p. 15) reports that data from the other provinces will not be available until late 1977.

Socio-Economic Survey, 1975-76

This survey also parallels the 1968-69 survey. Publication of the income distribution figures is planned for 1977 (Duncan [1976, pp. 15-16]).

B. Minor Data Sources

Among these are a rural manpower utilization study for 1969-70 (1,600 households in ten villages), rural economic surveys conducted every two years, an urban labor force survey for 1971, and industrial employment data (including number of workers, working hours, and average wage rates by industry) for each year since 1967.

C. Research Studies

Despite the difficulties which limit the usefulness of the 1962-63 Household Expenditure Survey, that survey is the basis for estimates of income distribution change between 1962-63 and 1968-69. Accordingly, these studies--by Kerdpibule (1972) McCleary (1972), and Meesook (1974)--are of questionable value for comparative purposes although the 1968-69 estimates which the authors present appear reliable.

Of greater potential is the study by Chiswick (1976) using the 1971-73 data to construct poverty profiles and characterize low income households as part of a broader effort to explain the distribution of income in Thailand.

D. Summary

Thailand presently offers good income distribution data of national scope for 1968-69. Comparable surveys for 1971-73 and 1975-76 are now being processed. Hence the prospects for studying changing income distribution over time are promising.

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